
FINAL
ENVIRONMENTAL IMPACT
STATEMENT

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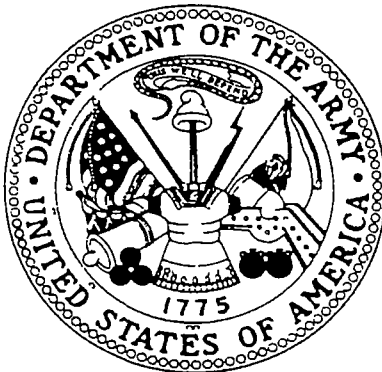
REALIGNMENT OF
PUEBLO DEPOT ACTIVITY
COLORADO

WITH TRANSFERS TO

TOOELE ARMY DEPOT, UTAH

AND

RED RIVER ARMY DEPOT, TEXAS



UNITED STATES ARMY

AUGUST 1991

00011906

REPORT DOCUMENTATION PAGE

1. REPORT DATE (DD-MM-YYYY) 01-08-1995	2. REPORT TYPE Final Environmental Impact Statement	3. DATES COVERED (FROM - TO) xx-xx-1995 to xx-xx-1995
4. TITLE AND SUBTITLE Final Environmental Impact Statement for Realignment of Pueblo Depot Activity, Colorado with Transfers to Tooele Army Depot, Utah, and Red River Army Depot, Texas Unclassified		5a. CONTRACT NUMBER
		5b. GRANT NUMBER
		5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)		5d. PROJECT NUMBER
		5e. TASK NUMBER
		5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME AND ADDRESS USACE, Omaha District CEMRO-PD-M 215 N. 17th St. Omaha , NE 68102-4978		8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME AND ADDRESS USACE, Omaha District CEMRO-PD-M 215 N. 17th St. Omaha , NE 68102-4978		10. SPONSOR/MONITOR'S ACRONYM(S) CEMRO-PD-M
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)
12. DISTRIBUTION/AVAILABILITY STATEMENT A PUBLIC RELEASE USACE, Omaha District CEMRO-PD-M		

215 N. 17th St.
Omaha , NE 68102-4978

13. SUPPLEMENTARY NOTES

14. ABSTRACT

This Final (EIS) describes the impacts associated with the realignment of Pueblo Depot Activity(PUDA) CO, and the transfers of the supply mission to Tooele Army Depot(TEAD) UT, and the conventional ammunition mission to Red River Army Depot (RRAD) TX. This document considers those actions recommended in the December 1988 report of the Defense Secretary's Commission on Base Realignment and Closure (BRAC) and those subsequent related actions necessary to complete the recommendations. The No Action alternative is included in this EIS as a baseline for comparison only because the Army is precluded from not accomplishing the proposed action by the terms of the Defense Authorization Amendments and Base Closure and Realignment Act of 24 October 1988. The major concerns described are the transfers of manpower spaces, materiel, and/or supplies from PUDA to TEAD, RRAD, and ANAD.

15. SUBJECT TERMS


Pueblo Depot Activity (PUDA), Tooele Army Depot (TEAD), Red River Army Depot (RRAD), Final Environmental Impact Statement (EIS), Realignment, Army

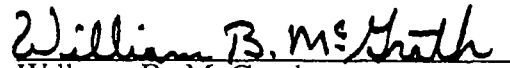
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Public Release	18. NUMBER OF PAGES 402	19a. NAME OF RESPONSIBLE PERSON Fenster, Lynn lfenster@dtic.mil
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			19b. TELEPHONE NUMBER International Area Code Area Code Telephone Number 703 767-9007 DSN 427-9007

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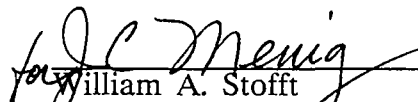
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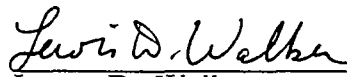
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Office of the Secretary of the Army


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Deputy Assistant Secretary of the Army
(Environment, Safety, and Occupational Health)

FINAL ENVIRONMENTAL IMPACT STATEMENT

LEAD AGENCY Department of the Army, U S Army Materiel Command

TITLE OF THE PROPOSED ACTION Realignment of Pueblo Depot Activity, Colorado, with transfers to Tooele Army Depot, Utah, and Red River Army Depot, Texas

AFFECTED JURISDICTION Pueblo Depot Activity, Pueblo County, Colorado, Tooele Army Depot, Davis, Salt Lake, Tooele, and Utah Counties, Utah, Red River Army Depot, Bowie County, Texas, and Little River and Miller Counties, Arkansas, and Anniston Army Depot, Calhoun County, Alabama

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REVIEWED BY William B McGrath, Major General, General Staff, Chief of Staff U S Army Materiel Command

RECOMMENDED APPROVAL William A Stofft, Major General General Staff Director of Management Office of the Chief of Staff Department of the Army

APPROVED BY Lewis D Walker, Deputy Assistant Secretary of the Army (Environment Safety and Occupational Health)

ABSTRACT This Final Environmental Impact Statement (EIS) describes the impacts associated with the realignment of Pueblo Depot Activity (PUDA), Colorado and the transfers of the supply mission to Tooele Army Depot (TEAD), Utah, and the conventional ammunition mission to Red River Army Depot (RRAD), Texas. It also describes the impacts of the construction of two new facilities at Anniston Army Depot (ANAD), Alabama, required as a result of the realignment of PUDA. This document considers those actions recommended in the December 1988 report of the Defense Secretary's Commission on Base Realignment and Closure (BRAC) and those subsequent related actions necessary to complete the recommendations. The Defense Secretary's Commission on BRAC was prevented from closing PUDA because of the ongoing chemical demilitarization mission. Consequently, the installation should be realigned to the maximum extent possible to facilitate closure as soon as demilitarization is complete. The No Action alternative is included in this EIS as a baseline for comparison only because the Army is precluded from not accomplishing the proposed action by the terms of the Defense Authorization Amendments and Base Closure and Realignment Act of 24 October 1988. The major concerns described are the transfers of manpower spaces, materiel, and/or supplies from PUDA to TEAD, RRAD, and ANAD.

The realignment of PUDA will have minimal adverse impacts on biological and cultural resources at PUDA, TEAD, RRAD, and ANAD. Although socioeconomic impacts at those four installations would be insignificant, increased unemployment in the Pueblo area suggests a continuation and possible expansion of a local assistance program for dislocated workers. Realignment actions at PUDA, TEAD, RRAD, and ANAD would have no significant adverse impacts on solid waste or hazardous waste management or remediation.

Following the 30-day waiting period, on or about 22 September 1991 a Record of Decision (ROD) will be filed with the Army Environmental Office. Point of contact for this action is Mr Robert Nebel, Attn CEMRO-PD-M, U S Army Corps of Engineers, Omaha District 215 North 17th Street Omaha Nebraska 68102-4978.

PUEBLO-EIS(08/91)

SUMMARY

INTRODUCTION

This Final Environmental Impact Statement (EIS) describes the realignment of Pueblo Depot Activity (PUDA), Colorado. The realignment is the result of the recommendations of the Defense Secretary's Commission on Base Realignment and Closure (BRAC) and legislative requirements in the Defense Authorization Amendments and Base Closure and Realignment Act (Public Law 100-526).

The major realignment actions involve the transfer of the supply mission from PUDA to Tooele Army Depot (TEAD), Utah, the transfer of the conventional ammunition mission from PUDA to Red River Army Depot (RRAD), Texas, with the demilitarization and a portion of the storage being transferred to other installations; and the transfer of the Army historical property and the Inertial Guidance Unit (IGU) to Anniston Army Depot (ANAD), Alabama. In addition, the maintenance program at PUDA will be eliminated. Other actions include the transfer of the Southwest Asia Petroleum Distribution Operational Project (a petroleum distribution system) and the U.S. Army Water Support System (a water storage, distribution, purification, and chilling equipment system) to Sierra Army Depot (SIAD), California. All or portions of two tenant organizations--the Health Services Command and the Area Calibration Repair Center--will also be transferred to other facilities.

The current personnel authorization at PUDA is 692--685 civilian and 7 military. The Commission states that approximately 75 civilians will

remain at PUDA to perform administrative requirements associated with ammunition storage igloos, munitions handling, munitions transport quality control activities, and security escort duties related to the chemical demilitarization (CHEM DEMIL) mission. Additionally, personnel will be needed to support those activities associated with CHEM DEMIL. CHEM DEMIL will be performed by contract. One-hundred ninety-five of the 685 civilian spaces at PUDA will be transferred, and 415 will be eliminated. Three of the seven military personnel will be transferred.

REPORT CONTENTS

Section 1 addresses the purpose, need, and scope of the actions proposed. Provisions of the Base Closure and Realignment Act preclude the examination of any alternative actions to realignment and require implementation of the realignment, therefore, the No Action alternative is not an alternative available to the Army. The No Action alternative is included in this EIS for comparative purposes, however. It is discussed as a continuation of the existing environmental conditions. For No Action to become a viable alternative, Congress would have to annul the existing Act. Alternatives are discussed in section 2. Section 3 presents the existing environmental conditions associated with the installations and their operations and serves as the baseline against which the impacts of realignment are judged.

Section 4 of this document addresses the impacts of the realignment on the existing environmental conditions. The environmental impacts at PUDA, at the three main receiving installations, and at various other installations are addressed.

The issues identified at the three public scoping meetings conducted at the beginning of the EIS process are discussed in Appendix A, Public Involvement and Notice of Intent, of this document. Appendix E contains

a summary of the public meeting held during the 45-day comment period on the Draft EIS. All comment letters and Department of the Army responses are also included in this appendix.

This EIS also contains an indepth evaluation of the ongoing Installation Restoration Program (IRP). IRP studies at PUDA, TEAD, RRAD and ANAD were in various stages of program planning as a part of the Defense Environmental Restoration Program (DERP) prior to the Commission's recommendation to realign PUDA. Hazardous wastes and materials are discussed to the extent they affect or are affected by the BRAC action.

The IRP is divided into three major phases which correspond to the procedures established under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Superfund Amendments and Reauthorization Act (SARA): (1) Preliminary Assessment/Site Inspection (PA/SI), (2) Remedial Investigation/Feasibility Study (RI/FS), and (3) Remedial Action. These phases are not discrete and some overlap of tasks within the phases may occur in practice.

- Enhanced Preliminary Assessment

The preliminary assessment involves a record search, examination of installation files, interviews with key current and former employees, and an examination of terrain and facilities. The second stage of the PA/SI process, the SI, expands the investigations for sites identified in the appropriate preliminary assessment as requiring further action.

- Remedial Investigation/Feasibility Study

If the Enhanced Preliminary Assessment indicates the potential for contaminated sites which preclude the release of the property, a RI/FS is initiated. The RI/FS phase, conducted by the U.S. Army Toxic and

Hazardous Materials Agency (USATHAMA), determines the nature and extent of the threat presented by a release and evaluates proposed remedies. An endangerment assessment is prepared which has three components: (1) a contamination assessment, (2) consideration of Federal or state remediation standards and environmental protection requirements, and (3) a public health evaluation including an exposure assessment, toxicity analysis, and risk characterization. The FS provides for full consideration of environmental issues and alternatives, provides an opportunity for the public to participate in evaluating environmental factors before a final decision is made, and is intended to comply with the National Environmental Policy Act (NEPA). Concerns relative to contamination of the sites, not covered in the EIS, would be addressed in the FS. The IRP process includes public involvement supported through news releases, fact sheet distribution, an information repository, and public meetings. This opportunity for public involvement is separate and in addition to that associated with this EIS.

Following the installation RI/FS report is the development of the Proposed Plan. This document provides a brief analysis of remedial alternatives, identifies the preferred alternatives and reasons for selection, and provides public information on how to participate in the remedy selection process. The timing of remedial action planning depends upon the results of the earlier investigations. A Record of Decision (ROD) is prepared from the Proposed Plan. The duration of this phase could range from a few months to two years. Following the ROD action to implement, the remedy is carried out through the Remedial Action phase.

- Remedial Action

In those cases where the RI/FS phase indicates that remediation is required prior to release of property, a Remedial Action Plan is prepared and remedial action is undertaken. The execution of the remedial action

is generally carried out by the appropriate U S Army Corps of Engineers (USACE) Division or District

- Statement of Condition

At the completion of the Remedial Action phase, the implementing organization will issue to USATHAMA a report which verifies and certifies the remedial action process. This report will be included in the Statement of Condition package which will permit the ultimate disposal of the property.

PUEBLO DEPOT ACTIVITY

There may be some temporary effects on vegetation, none of which are endangered, from increased truck and/or train traffic at PUDA during transfer of materials. There may also be some minor indirect effects such as temporary soil disturbances, a temporary increase of airborne contaminants from vehicular activity, and a temporary increase in noise levels. Given the small areas involved, the previous disturbance of the areas, and the limited use of the areas by wildlife, any effects are expected to be insignificant. The overall impact on biological resources would be minimal, and no wetlands or critical habitat areas are involved. Other than these minor effects, there should be only positive impacts on the biological resources because, with a minimum amount of caretaker actions, the area would tend to revert back to its natural character with disuse.

At present, restriction of access to PUDA results in minimal potential for vandalism of as-yet-unrecorded historical properties located on the installation. In addition, prior to undertaking any ground-disturbing activities at PUDA that could harm such properties, the Army is required to comply with Section 106 of the National Historic Preservation Act.

Because of the CHEM DEMIL mission and the hazardous waste site remediation program, there are presently no plans to dispose of PUDA property, therefore, existing cultural resources will continue to be protected under caretaker responsibilities. However, any future disposal of PUDA lands will require further environmental impact analysis documentation and additional cultural resources actions. A Historic Preservation Plan (HPP) must be completed before 1995 for PUDA lands that remain under Army control, as required by a Programmatic Agreement between the Department of the Army, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers. A copy of this agreement is contained in Appendix B, Cultural Data. Interim maintenance of historic buildings and protection of archeological sites will be accomplished by implementing the HPP.

The socioeconomic effects of realignment, including those on population, employment, income, housing, schools, transportation, and utilities, were found to be insignificant on a regional basis. However, because of the severe effect that increased unemployment will have on affected persons, a continuation and possible expansion of the PUDA Dislocated Workers Assistance Program is recommended.

One or more additional air pollution emission permits from the Colorado Department of Health will be required to allow open burning/open detonation of conventional ammunition scheduled for demilitarization at PUDA.

Realignment would have no direct impact on identified or suspected waste areas. Solid waste management units (SWMU's) or areas requiring environmental evaluation (AREE's) at PUDA are under various stages of investigation and remediation.

In accordance with Resource Conservation and Recovery Act (RCRA) guidelines, a number of SWMU's/AREE's are currently being assessed. Further study of the remaining SWMU's/AREE's will continue as part of the ongoing program/mission for PUDA during and after realignment.

Realignment will have no significant impact on hazardous waste management at PUDA, specifically waste treatment, disposal, and storage programs. Generally, waste generation at PUDA should decrease as the mission functions are curtailed. Design capacities specified under existing RCRA interim status requirements should not be exceeded.

The CHEM DEMIL schedule and the types or quantities of wastes to be treated or disposed of will not be affected as a result of the realignment.

Several buildings and structures will be closed and relegated to caretaker status during the realignment. The closure of specific facilities is expected to be dependent on requirements for support of the ongoing CHEM DEMIL mission. Conventional ammunition storage igloos will be closed as stocks are transferred for demilitarization. Fuel storage areas not required to support the CHEM DEMIL mission will also be closed.

Hazardous material storage areas, such as the polychlorinated biphenyl (PCB) storage area, the pesticide storage area, and the Defense Reutilization and Marketing Office staging facility, are scheduled to remain operational until completion of the CHEM DEMIL mission.

Those PCB transformers currently located throughout the installation that are not used after realignment will require removal, storage, and disposal as areas are closed.

The facility-wide asbestos surveys that were completed in 1990 included structures scheduled for closure. Asbestos abatement will be performed for buildings identified with asbestos-containing materials, whether active or inactive, prior to base closure, in accordance with standard Army procedures.

TOOELE ARMY DEPOT

Some relatively minor impacts to the physical environment of TEAD would occur from construction of a new storage facility and renovation of five existing maintenance shops for use as storage facilities. The proposed construction area, however, has been previously disturbed. Temporary soil disturbances, a temporary increase of airborne contaminants from vehicular activity, and a temporary increase in noise levels would occur during construction. Some loss of vegetation (none endangered) because of the construction would occur. Because of the small area involved, its previous disturbance, and its limited use by wildlife, impacts would not be significant, and no wetlands or critical habitat areas are involved.

An archeological survey of the area of proposed construction showed that the area has been heavily disturbed by past grading activities. No evidence of prehistoric or historic period cultural resources was encountered, and it was determined that the proposed new construction would have no effect on properties listed on or eligible for the National Register of Historic Places (NRHP). Proposed actions at TEAD involve the renovation of a number of existing structures. Because these structures were built during World War II, architectural evaluations and effect determinations were conducted by personnel from USACE's Fort Worth District. It was determined that none of these structures were eligible for inclusion on the NRHP and that the proposed BRAC-related renovations would have no effect on NRHP eligible or listed properties. Notice of

this determination and the supporting documentation have been provided to the Utah State Historic Preservation Officer (SHPO) in accordance with the Section 106 consultation process

The increases in population, occupied housing units, students in public schools; employment (temporary increase), wages and salaries, expenditures for goods, services, and materials, and regional personal income are all considered to be insignificant impacts. Any increases in water use, use of sewage treatment facilities, and energy requirements would also be insignificant.

A modification to an existing air emission permit from the Utah Department of Health may be required for the future operation of the Ammunition Peculiar Equipment 1236 (APE-1236) furnace.

The investigation and remediation of TEAD-North (TEAD-N), is an ongoing mission. Realignment of PUDA, with the subsequent transfer of conventional ammunition for demilitarization and the transfer of conventional storage items to TEAD-N, is not likely to impact the IRP.

Waste sites should not be affected by the new construction or the renovation to house the transferred storage items. The new facility was not sited within contaminated areas.

Hazardous waste storage areas should not be affected by realignment activities in that stock items transferred for storage, in addition to ammunition transferred for demilitarization, are not anticipated to generate wastes that may require storage and disposal as hazardous waste.

The sanitary landfill, which accepts building debris, asbestos, and sanitary waste, may experience increased activity as a result of realignment. Building debris resulting from the renovation and

construction for transferred stocks will require disposal. The landfill is currently scheduled for investigation under the IRP for past hazardous waste disposal activities and contamination, however, closure is not currently indicated.

The PCB storage area and the PCB transformers located in various locations at the installation should not be affected by the realignment.

The underground storage tanks at TEAD-N will not be affected by the construction and renovation activities required for the realignment action.

RED RIVER ARMY DEPOT

No impacts to the physical environment at RRAD would occur because no new construction is associated with the realignment action. The overall impact on biological resources would be minimal, and no wetlands or critical habitat areas are involved. No animals on the State or Federal threatened or endangered species list are known to inhabit RRAD. Minimal wildlife activity has been observed in the area and that was limited to common birds; no mammals were observed.

The BRAC actions will not affect significant cultural resources properties. The Texas SHPO concurred with the determination of no effect.

Any impacts to population, employment, income, housing, schools, transportation, and utilities are considered insignificant. There would be only a temporary insignificant increase in noise levels during the transfer activities.

Because of an overall 30-percent increase in the long-term storage at RRAD, it is likely that a revision of or a modification to a pending RCRA

permit will be required. A permit which includes air emission restrictions for the future operation of the APE-1236 furnace will also be required (application is currently being prepared) before that facility can become operational. Both permit actions are under the authority of U.S. Environmental Protection Agency, the Texas Water Commission, and the Texas Air Control Board.

Although the ammunition transferred for storage represents a 30-percent increase in existing stocks, the increase will not require construction of additional storage facilities. RRAD ammunition storage areas are currently operating under their capacity and will easily accommodate the transferred ammunition.

The planned transfer of conventional ammunition for storage should have no significant impact on the current IRP investigations or remediation activities.

Incidental demilitarization associated with long-term storage of ammunition may be increased by as much as 30 percent from the transfer of the cluster bombs for storage at RRAD. However, the increase in potential incidental demilitarization should not require a modification to the permit application for a change in design capacity.

No significant wastes would be generated as a result of the increased storage requirements, therefore, hazardous waste storage and disposal should not be affected by the realignment.

ANNISTON ARMY DEPOT

Some relatively minor impacts to the physical environment of ANAD would occur from the construction of two new facilities. The proposed construction area for the facility to house the Army historical artifacts

is presently occupied by old vacant housing units scheduled for demolition. The construction area for the IGU is presently used as an outside storage area for tank parts. The site is void of trees and has very sparse vegetation. Some loss of vegetation (none endangered) would occur as a result of the construction of these facilities, because of previous disturbance, the small areas involved, and the limited use by wildlife, the impacts would not be significant.

The area of the proposed IGU facility was surveyed and no cultural resource properties were discovered. No cultural resources would be affected by the project. The area of the proposed historic artifacts storage facility will be surveyed prior to construction.

Any impacts to population, employment, income, housing, schools, transportation, or utilities would be insignificant. A temporary but insignificant increase in construction-related employment may occur.

The site for the IGU facility was carefully located in a clean location to prevent conditions that would require disturbance of any hazardous waste. The construction site category as defined in Army Regulation (AR) 210-20 and Army Materiel Command guidance is a Category I. There are no adverse impacts expected with the siting or the construction of the IGU facility at ANAD. All required site investigations have been performed to ensure that the IGU facility is on a clean site.

SIAD AND OTHER INSTALLATIONS

The realignment of PUDA will have no significant impact on the waste areas at SIAD or on the IRP. Demilitarization activities, although adding to the existing contamination at the burning grounds, will not cause a significant impact. The planned transfer of cluster bombs is not

anticipated to impact conventional ammunition storage capacities at SIAD. Also, there are no anticipated impacts on the existing waste disposal capability as a result of the realignment. And finally, no significant adverse impacts to air quality are likely as a result of demilitarization.

Because of the small amounts of additional ammunition scheduled for demilitarization at Navajo Depot Activity, Crane Army Ammunition Activity, McAlester Army Ammunition Plant, Hawthorne Army Ammunition Plant, and Seneca Army Depot, air quality impacts are considered insignificant. The small quantity of munitions being transferred will have no significant impact on current operating conditions at these facilities.

IMPACT SUMMARY

Table S-1 summarizes the environmental impacts of the PUDA realignment. None of the impacts of the realignment action are considered significant.

COMPLIANCE

The realignment activities discussed in this EIS are each affected (wholly or in part) by the environmental statutes presented in table S-2. Compliance with these statutes is consistent with the status of the BRAC action at the time of this EIS. In compliance with 40 CFR 1506.6 and AR 200-2, a copy of the Notice of Intent to prepare an EIS is included in appendix A of this document.

Table S-1
Impact Summary

Resource	PUDA		TEAD		RRAD		Anniston	
	No Action	Realign- ment	No Action	Realign- ment	No Action	Realign- ment	No Action	Realign- ment
Physical Environment								
Climate	NS	NS	NS	NS	NS	NS	NS	NS
Soils	NS	TA	NS	TA	NS	TA	NS	TA
Water	NS	NS	NS	NS	NS	NS	NS	NS
Noise	NS	NS	NS	TA	NA	NS	NS	TA
Biological Resources	NS	NS	NS	NS	NS	NS	NS	NS
Cultural Resources	NS	NS	NS	NS	NS	NS	NS	NS
Socioeconomic Resources								
Population	NS	NS	NS	NS	NS	NS	NS	NS
Housing	NS	NS	NS	NS	NS	NS	NS	NS
Schools	NS	NS	NS	NS	NS	NS	NS	NS
Employment	NS	NS	NS	NS	NS	NS	NS	NS
Income	NS	NS	NS	NS	NS	NS	NS	NS
Transportation	NS	NS	NS	NS	NS	NS	NS	NS
Utilities	NS	NS	NS	NS	NS	NS	NS	NS
Hazardous and Toxic Wastes	NS	NS	NS	NS	NS	NS	NS	NS

This category includes the installations that will be receiving small amounts of materiel and/or personnel spaces from the realignment of PUDA. These installations could experience some temporary adverse impacts during receipt of stocks. Any impact, however, would be insignificant.

- S = significant effect
- PS = potentially significant adverse effect
- NS = no significant adverse effect
- B = beneficial effect
- TB = temporary insignificant beneficial effect
- TA = temporary insignificant adverse effect

Table S-2
Compliance With Environmental Statutes

<u>Federal Policy</u>	<u>Compliance</u> ^{1/}
<u>Acts</u>	
Clean Air Act, as amended (Public Law 89-272)	Ongoing
Clean Water Act, as amended (Public Law 95-217)	Complete
Comprehensive Environmental Response, Compensation, and Liability Act (Public Law 96-510), as amended by the Superfund Amendments and Reauthorization Act (Public Law 99-499)	Ongoing
Endangered Species Act of 1972, as amended (Public Law 93-205)	Complete
Hazardous and Solid Waste Amendments of 1984 (Public Law 98-616)	Ongoing
National Environmental Policy Act of 1969 (Public Law 91-190)	Ongoing
National Historic Preservation Act of 1966, as amended (Public Law 89-665)	Ongoing
Resource Conservation and Recovery Act (Public Law 94-580)	Ongoing
Toxic Substances Control Act (Public Law 94-469)	Ongoing
<u>Executive Orders</u>	
Flood Plain Management (E O 11988)	Complete
Protection of Wetlands (E.O 11990)	Complete
^{1/} Complete - having met all statutory requirements for this action	
Ongoing - some requirements of the regulations remain to be met by subsequent installation actions before implementation of some of the actions associated with the realignment	

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RED RIVER ARMY DEPOT, TEXAS

TABLE OF CONTENTS

<u>Item</u>	<u>Page No.</u>
COVER SHEET	
SUMMARY	S-1
ACRONYM LIST	xii
1 - PURPOSE AND NEED FOR THE ACTION	
1 0 COMMISSION RECOMMENDATIONS	1-1
1 1 IMPACT ANALYSIS PROCESS	1-4
1 2 SCOPING MEETINGS	1-11
2 - ALTERNATIVES CONSIDERED	
2.0 INTRODUCTION	2-1
2.1 PROPOSED ACTIONS	2-1
2.1.1 DESCRIPTION OF THE ACTIONS	2-1
2.1.2 MANPOWER SUMMARY	2-2
2.1.2.1 AUTHORIZATION	2-5
2.1.2.2 TRANSFERS	2-5
2.1.2.3 GAINS	2-6
2.1.2.4 ELIMINATIONS	2-6
2.1.2.5 RESULTS	2-6
2.1.3 STOCK MOVEMENT AND DISPOSAL SUMMARY	2-6
2.1.3.1 CONVENTIONAL AMMUNITION STOCK SHIPMENTS	2-6
2.1.3.1.1 BACKGROUND	2-8
2.1.3.1.2 CONVENTIONAL AMMUNITION SHIPMENTS	2-10
2.1.3.1.3 CONVENTIONAL AMMUNITION DEMILITARIZATION	2-10
2.1.3.2 GENERAL SUPPLY STOCK SHIPMENTS	2-11
2.1.3.3.1 ARMY HISTORICAL ARTIFACTS STORAGE STOCKS AND INERTIAL GUIDANCE UNIT	2-12

TABLE OF CONTENTS (Cont'd)

<u>Item</u>	<u>Page No</u>
2 1 3.3 2 SOUTHWEST ASIA PETROLEUM DISTRIBUTION OPERATION PROJECT AND THE U.S. ARMY WATER SUPPORT SYSTEM	2-13
2.2 ALTERNATIVES TO THE PROPOSED ACTION	2-14
2 3 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION . .	2-15
2.3 1 ALTERNATIVE 1 - NO ACTION ALTERNATIVE	2-15
2.3 2 ALTERNATIVE 2 - MODIFIED IMPLEMENTATION SCHEDULE .	2-15
2 4 ALTERNATIVES CONSIDERED IN DETAIL	2-16
2 4 1 ALTERNATIVE 3 - EXISTING IMPLEMENTATION PLAN	2-16
2 4 1 1 ALTERNATIVES FOR IMPLEMENTING THE TRANSFERS	2-16
2 4 1 1 1 TRANSFER OF THE GENERAL SUPPLY MISSION	2-17
2 4 1 1 2 TRANSFER OF THE CONVENTIONAL AMMUNITION MISSION	2-17
2 4 1 2 OTHER ACTIONS	2-18
2 4 1 2 1 TRANSFER OF THE SOUTHWEST ASIA PETROLEUM DISTRIBUTION OPERATION AND U.S ARMY WATER SUPPORT SYSTEM STOCKS TO SIERRA ARMY DEPOT	2-18
2 4 1 2 2 TRANSFER OF THE ARMY HISTORICAL PROPERTY AND THE INERTIAL GUIDANCE UNIT TO ANNISTON ARMY DEPOT	2-18
2 4.1.2 3 MISCELLANEOUS TRANSFERS	2-19
2 4 1 2.3.1 MILITARY MATERIEL AND EQUIPMENT	2-19
2 4 1 2 3 2 CONVENTIONAL AMMUNITION	2-20
2.4 1 2.4 TRANSPORTATION ALTERNATIVES	2-21
2 4 1.2 5 REFORMULATION OF THE INFORMATION SYSTEMS COMMAND MISSION	2-22
2 4 1 2 6 DISCONTINUANCE OF THE AREA CALIBRATION REPAIR CENTER	2-22
2.5 IMPACTS	2-22
2 6 OFFICE OF ECONOMIC ADJUSTMENT INVOLVEMENT	2-24

TABLE OF CONTENTS (Cont'd)

<u>Item</u>	<u>Page No</u>
2 7 CUMULATIVE EFFECTS	2-24
2 7.1 PUEBLO DEPOT ACTIVITY	2-25
2 7 1.1 INTERNATIONAL AGREEMENTS	2-25
2 7.1.2 BASE OPERATIONS	2-26
2 7 1 3 FACILITIES REQUIREMENTS	2-26
2 7 1.4 EMPLOYMENT	2-27
2.7.2 TOOELE ARMY DEPOT	2-27
2.7.3 RED RIVER ARMY DEPOT	2-28
3 - AFFECTED ENVIRONMENT	
3.0 INTRODUCTION	3-1
3.1 PUEBLO DEPOT ACTIVITY	3-1
3.1 1 GENERAL	3-1
3 1.2 CURRENT MISSION	3-2
3.1 3 PHYSICAL ENVIRONMENT	3-4
3 1 3.1 PHYSIOGRAPHY	3-4
3 1 3 2 CLIMATE	3-4
3 1 3.3 SOILS	3-8
3 1 3 4 WATER RESOURCES	3-9
3 1 3.4 1 SURFACE WATER	3-9
3 1 3 4 2 GROUND WATER	3-10
3 1 3 5 NOISE	3-15
3.1.3 6 AIR QUALITY	3-18
3.1 4 BIOLOGICAL RESOURCES	3-22
3 1.4 1 FLORA	3-22
3.1.4 2 FAUNA	3-23
3.1.5 CULTURAL RESOURCES	3-25
3.1.6 SOCIOECONOMIC RESOURCES	3-26
3 1.6 1 POPULATION	3-26
3 1.6 2 EMPLOYMENT	3-27
3.1 6.3 INCOME	3-27
3.1.6.4 HOUSING	3-28
3.1.6 5 SCHOOLS	3-29
3.1.6.6 TRANSPORTATION	3-29
3.1.6.7 UTILITIES	3-30
3.1 6 7.1 PUEBLO DEPOT ACTIVITY	3-30
3.1.6.7.2 AREA COMMUNITIES	3-33

TABLE OF CONTENTS (Cont'd)

<u>Item</u>	<u>Page No.</u>
3 1 7 HAZARDOUS AND TOXIC WASTES, INSTALLATION RESTORATION PROGRAM	3-35
3.1 7.1 WESTERN DEMOLITION AREA	3-39
3 1.7.2 AMMUNITION WORKSHOP AREA	3-47
3.1 7 3 WAREHOUSE-LANDFILL AREA	3-50
3 1 7 4 EASTERN DEMOLITION AREA	3-55
3 1 7 5 MUNITIONS STORAGE AREA	3-58
3 1 7 6 SUMMARY	3-61
3 1 8 HAZARDOUS WASTE AND MATERIAL MANAGEMENT PROGRAM	3-61
3 1 8 1 HAZARDOUS WASTES	3-61
3 1 8 2 HAZARDOUS AND TOXIC MATERIALS	3-63
3 2 TOOELE ARMY DEPOT	3-65
3 2.1 GENERAL	3-65
3 2 2 CURRENT MISSION	3-67
3.2 3 PHYSICAL ENVIRONMENT	3-68
3.2 3 1 PHYSIOGRAPHY	3-68
3 2 3 2 CLIMATE	3-69
3 2.3 3 SOILS	3-71
3 2 3 4 WATER RESOURCES	3-71
3 2 3 5 NOISE	3-73
3 2 3 6 AIR QUALITY	3-75
3 2 4 BIOLOGICAL RESOURCES	3-76
3.2 4 1 FLORA	3-76
3 2 4 2 FAUNA	3-79
3.2 5 CULTURAL RESOURCES	3-80
3 2 5.1 GENERAL	3-80
3.2 5 2 PREHISTORIC RESOURCES	3-81
3 2 5 3 HISTORIC RESOURCES	3-82
3 2 6 SOCIOECONOMIC RESOURCES	3-82
3 2 6 1 POPULATION	3-82
3 2 6 2 EMPLOYMENT	3-83
3 2 6 3 INCOME	3-84
3 2 6 4 HOUSING	3-84
3 2.6 5 SCHOOLS	3-85
3 2.6 6 TRANSPORTATION	3-85
3 2 6 7 UTILITIES	3-86
3.2.6 7.1 TOOELE ARMY DEPOT	3-86
3.2 6.7.2 AREA COMMUNITIES	3-87
3.2 7 HAZARDOUS AND TOXIC WASTES, INSTALLATION RESTORATION PROGRAM	3-89
3 2 7 1 TNT WASHOUT FACILITY AREA	3-90
3 2.7.2 FORMER TRANSFORMER STORAGE AREA AND PCB SPILL SITE	3-91

TABLE OF CONTENTS (Cont'd)

<u>Item</u>	<u>Page No</u>
3.2.7.3 OPEN BURNING/OPEN DETONATION AREA	3-91
3.2.7.4 SUMMARY	3-92
3.2.8 HAZARDOUS WASTE AND MATERIAL MANAGEMENT PROGRAM	3-92
3.2.8.1 HAZARDOUS WASTES	3-92
3.2.8.2 HAZARDOUS AND TOXIC MATERIALS	3-94
3.3 RED RIVER ARMY DEPOT	3-95
3.3.1 GENERAL	3-95
3.3.2 CURRENT MISSION	3-97
3.3.3 PHYSICAL ENVIRONMENT	3-98
3.3.3.1 PHYSIOGRAPHY	3-98
3.3.3.2 CLIMATE	3-98
3.3.3.3 SOILS	3-99
3.3.3.4 WATER RESOURCES	3-100
3.3.3.5 NOISE	3-101
3.3.3.6 AIR QUALITY	3-103
3.3.4 BIOLOGICAL RESOURCES	3-104
3.3.4.1 FLORA	3-104
3.3.4.2 FAUNA	3-106
3.3.5 CULTURAL RESOURCES	3-108
3.3.5.1 GENERAL	3-108
3.3.5.2 PREHISTORIC RESOURCES	3-109
3.3.5.3 HISTORIC RESOURCES	3-110
3.3.5.4 NATIVE AMERICAN CONCERNS	3-111
3.3.6 SOCIOECONOMIC RESOURCES	3-111
3.3.6.1 POPULATION	3-111
3.3.6.2 EMPLOYMENT	3-112
3.3.6.3 INCOME	3-112
3.3.6.4 HOUSING	3-112
3.3.6.5 SCHOOLS	3-113
3.3.6.6 TRANSPORTATION	3-113
3.3.6.7 UTILITIES	3-114
3.3.6.7.1 RED RIVER ARMY DEPOT	3-114
3.3.6.7.2 AREA COMMUNITIES	3-115
3.3.7 HAZARDOUS AND TOXIC WASTES, INSTALLATION RESTORATION PROGRAM	3-117
3.3.8 HAZARDOUS WASTE AND MATERIAL MANAGEMENT PROGRAM	3-117
3.3.8.1 HAZARDOUS WASTES	3-117
3.3.8.2 HAZARDOUS AND TOXIC MATERIALS	3-119

TABLE OF CONTENTS (Cont'd)

<u>Item</u>	<u>Page No</u>
3 4 OTHER INSTALLATIONS	3-120
3 4 1 ANNISTON ARMY DEPOT	3-121
3 4.1 1 GENERAL	3-121
3 4 1 2 CURRENT MISSION	3-123
3 4 1 3 PHYSICAL ENVIRONMENT	3-124
3 4 1.3 1 PHYSIOGRAPHY AND TOPOGRAPHY	3-124
3 4.1.3.2 CLIMATE	3-124
3 4.1.3.3 SOILS	3-125
3 4.1 3 4 WATER RESOURCES	3-126
3.4 1 3 5 NOISE	3-127
3 4.1 3 6 AIR QUALITY	3-128
3 4 1 4 BIOLOGICAL RESOURCES	3-129
3 4 1 4.1 FLORA	3-129
3 4 1 4 2 FAUNA	3-129
3 4 1 5 CULTURAL RESOURCES	3-131
3 4 1 6 SOCIOECONOMIC RESOURCES	3-131
3 4 1 6 1 GENERAL	3-131
3.4 1 6.2 TRANSPORTATION	3-132
3 4 1 6 3 UTILITIES	3-133
3 4 1 7 HAZARDOUS AND TOXIC WASTES	3-133
3 4 2 SIERRA ARMY DEPOT	3-134
3 4 2 1 HAZARDOUS AND TOXIC WASTES, INSTALLATION RESTORATION PROGRAM	3-134
3 4 2 2 HAZARDOUS WASTE AND MATERIAL MANAGEMENT PROGRAM	3-136
3 4 2 2 1 HAZARDOUS WASTES	3-136
3 4 2.2 2 HAZARDOUS AND TOXIC MATERIALS	3-137
3 4 3 INSTALLATIONS RECEIVING CONVENTIONAL AMMUNITION (AIR QUALITY)	3-138
3 4 3 1 NAVAJO DEPOT ACTIVITY	3-138
3.4 3 2 SIERRA ARMY DEPOT	3-139
3 4 3 3 CRANE ARMY AMMUNITION ACTIVITY	3-140
3 4 3 4 MCALESTER ARMY AMMUNITION PLANT	3-140
3.4 3 5 LONG-TERM STORAGE - MISCELLANEOUS LOCATIONS	3-141
 4 - ENVIRONMENTAL AND SOCIOECONOMIC CONSEQUENCES	
4 0 INTRODUCTION	4-1
4 1 PUEBLO DEPOT ACTIVITY	4-1
4 1 1 PHYSICAL ENVIRONMENT	4-1
4 1 1 1 AIR QUALITY	4-2
4 1 2 BIOLOGICAL RESOURCES	4-4

TABLE OF CONTENTS (Cont'd)

<u>Item</u>	<u>Page No</u>
4.1.3 CULTURAL RESOURCES	4-4
4.1.4 SOCIOECONOMIC RESOURCES	4-5
4.1.4.1 INTRODUCTION	4-5
4.1.4.2 POPULATION	4-8
4.1.4.3 EMPLOYMENT	4-8
4.1.4.4 INCOME	4-10
4.1.4.5 HOUSING	4-10
4.1.4.6 SCHOOLS	4-10
4.1.4.7 TRANSPORTATION	4-11
4.1.4.8 UTILITIES	4-22
4.1.4.8.1 PUEBLO DEPOT ACTIVITY	4-22
4.1.4.8.2 AREA COMMUNITIES	4-23
4.1.5 HAZARDOUS AND TOXIC WASTES, INSTALLATION RESTORATION PROGRAM	4-24
4.1.6 HAZARDOUS WASTE AND MATERIAL MANAGEMENT PROGRAM	4-27
4.1.6.1 HAZARDOUS WASTES	4-27
4.1.6.2 HAZARDOUS AND TOXIC MATERIALS	4-29
4.1.7 MITIGATION	4-31
4.2 TOOELE ARMY DEPOT	4-32
4.2.1 PHYSICAL ENVIRONMENT	4-32
4.2.1.1 AIR QUALITY	4-33
4.2.2 BIOLOGICAL RESOURCES	4-34
4.2.3 CULTURAL RESOURCES	4-34
4.2.4 SOCIOECONOMIC RESOURCES	4-35
4.2.4.1 INTRODUCTION	4-35
4.2.4.2 POPULATION	4-36
4.2.4.3 EMPLOYMENT	4-36
4.2.4.4 INCOME	4-37
4.2.4.5 HOUSING	4-39
4.2.4.6 SCHOOLS	4-39
4.2.4.7 TRANSPORTATION	4-39
4.2.4.8 UTILITIES	4-40
4.2.4.8.1 TOOELE ARMY DEPOT	4-40
4.2.4.8.2 AREA COMMUNITIES	4-41
4.2.5 HAZARDOUS AND TOXIC WASTES, INSTALLATION RESTORATION PROGRAM	4-42
4.2.6 HAZARDOUS WASTE AND MATERIAL MANAGEMENT PROGRAM	4-43
4.2.6.1 HAZARDOUS WASTES	4-43
4.2.6.2 HAZARDOUS AND TOXIC MATERIALS	4-44
4.2.7 MITIGATION	4-44

TABLE OF CONTENTS (Cont'd)

<u>Item</u>	<u>Page No</u>
4 3 RED RIVER ARMY DEPOT	4-45
4 3 1 PHYSICAL ENVIRONMENT	4-45
4.3.1.1 AIR QUALITY	4-45
4.3.2 BIOLOGICAL RESOURCES	4-46
4 3 3 CULTURAL RESOURCES	4-47
4.3.4 SOCIOECONOMIC RESOURCES	4-47
4.3.4.1 INTRODUCTION	4-47
4.3 4 2 POPULATION	4-48
4.3.4.3 EMPLOYMENT	4-49
4 3 4.4 INCOME	4-49
4 3 4 5 HOUSING	4-49
4 3 4 6 SCHOOLS	4-50
4.3 4.7 TRANSPORTATION	4-50
4 3 4 8 UTILITIES	4-50
4 3 4 8 1 RED RIVER ARMY DEPOT	4-50
4 3.4 8 2 AREA COMMUNITIES	4-51
4 3 5 HAZARDOUS AND TOXIC WASTES, INSTALLATION RESTORATION PROGRAM	4-51
4 3 6 HAZARDOUS WASTE AND MATERIAL MANAGEMENT PROGRAM	4-52
4 3 7 MITIGATION	4-52
4 4 OTHER INSTALLATIONS	4-53
4.4 1 ANNISTON ARMY DEPOT	4-53
4.4 1 1 PHYSICAL ENVIRONMENT	4-53
4.4.1.1.1 AIR QUALITY	4-54
4 4 1.2 BIOLOGICAL RESOURCES	4-55
4 4 1 3 CULTURAL RESOURCES	4-55
4.4.1.4 SOCIOECONOMIC RESOURCES	4-56
4.4 1 4 1 GENERAL	4-56
4 4 1 4.2 TRANSPORTATION	4-57
4 4 1 4.3 UTILITIES	4-58
4 4.1 5 HAZARDOUS AND TOXIC WASTES	4-58
4 4 1 6 MITIGATION	4-59
4.4 2 SIERRA ARMY DEPOT	4-60
4 4 2.1 HAZARDOUS AND TOXIC WASTES, INSTALLATION RESTORATION PROGRAM	4-60
4 4 2 2 HAZARDOUS WASTE AND MATERIAL MANAGEMENT PROGRAM	4-60
4.4 2 2 1 HAZARDOUS WASTES	4-60
4 4 2 2 2 HAZARDOUS AND TOXIC MATERIALS	4-61
4 4 2.3 AIR QUALITY	4-62
4 4 2.4 MITIGATION	4-62

TABLE OF CONTENTS (Cont'd)

<u>Item</u>	<u>Page No</u>
4 4 3 AMMUNITION-RECEIVING INSTALLATIONS (AIR QUALITY)	4-62
4 4 3 1 NAVAJO DEPOT ACTIVITY	4-62
4 4 3 2 CRANE ARMY AMMUNITION ACTIVITY	4-63
4 4 3 3 MCALESTER ARMY AMMUNITION PLANT	4-63
4 4 3 4 LONG-TERM STORAGE - MISCELLANEOUS LOCATIONS	4-64
4 4 4 AMMUNITION-RECEIVING INSTALLATIONS (HAZARDOUS AND TOXIC WASTES)	4-64
4 4 4 1 NAVAJO DEPOT ACTIVITY	4-65
4 4 4 2 MCALESTER ARMY AMMUNITION PLANT AND CRANE ARMY AMMUNITION ACTIVITY	4-65
4 5 NO ACTION	4-65
4 6 IMPACT CONCLUSIONS	4-66
4 6 1 UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS	4-66
4 6 2 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY	4-66
4 6 3 ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED	4-66

5 - LIST OF PREPARERS

6 - REFERENCES CITED

7 - DISTRIBUTION LIST

8 - INDEX

TABLE OF CONTENTS (Cont'd)

LIST OF TABLES

<u>No</u>	<u>Title</u>	<u>Page No.</u>
S-1	IMPACT SUMMARY	S-12
S-2	COMPLIANCE WITH ENVIRONMENTAL STATUTES	S-13
2-1	DISTRIBUTION OF MATERIEL FROM PUDA	2-3
2-2	MOVEMENT OF CONVENTIONAL AMMUNITION AT PUDA	2-9
2-3	PLANNED MOVEMENT OF CONVENTIONAL AMMUNITION AT PUDA	2-10
2-4	TRANSPORTATION IMPACT SUMMARY	2-22
2-5	IMPACT SUMMARY	2-23
3-1	TEMPERATURE RANGES IN THE PUDA AREA	3-7
3-2	PRECIPITATION IN THE PUDA AREA	3-7
3-3	SUMMARY OF 1987 AIR QUALITY IN THE SOUTH-CENTRAL COLORADO REGION	3-19
3-4	EMISSIONS AND CONTAMINANTS GENERATED BY OPEN BURNING/ OPEN DETONATION FOR COMMON PROPELLANTS AND EXPLOSIVES	3-20
3-5	STACK AND POLLUTANT EMISSIONS AT PUDA - 1988	3-21
3-6	1989 UNEMPLOYMENT RATES	3-27
3-7	HISTORIC MOVEMENT OF AMMUNITION TO AND FROM PUDA, FY 85 - FY 89	3-30
3-8	1989 UNEMPLOYMENT RATES	3-84
4-1	REDUCTION IN STACK AND POLLUTANT EMISSIONS AS A RESULT OF REALIGNMENT	4-3
4-2	PUDA RATIONAL THRESHOLD VALUES	4-6
4-3	LABOR FORCE BY RACE	4-9
4-4	SHIPMENTS FOR DEMILITARIZATION	4-12
4-5	RAW MATERIEL AND STOCK SHIPMENTS	4-13
4-6	ENERGY CONSUMPTION BY TRANSPORTATION ALTERNATIVE	4-15
4-7	AIR EMISSIONS BY TRANSPORTATION ALTERNATIVE	4-16
4-8	TRANSPORTATION COST BY ALTERNATIVE	4-17
4-9	ESTIMATED SHIPMENTS BY DESTINATION	4-21
4-10	ACTIVE FACILITIES AND DATES SCHEDULED FOR CLOSURE	4-30
4-11	TEAD RATIONAL THRESHOLD VALUES	4-35
4-12	RRAD RATIONAL THRESHOLD VALUES	4-48
4-13	ANAD RATIONAL THRESHOLD VALUES	4-56

TABLE OF CONTENTS (Cont'd)

LIST OF FIGURES

<u>No.</u>	<u>Title</u>	<u>Page No</u>
1-1	GENERAL LOCATION MAP	1-2
1-2	GENERAL SITE PLAN, PUEBLO DEPOT ACTIVITY	1-5
1-3	GENERAL SITE PLAN, TOOEELE ARMY DEPOT NORTH AREA	1-6
1-4	GENERAL SITE PLAN, RED RIVER ARMY DEPOT	1-7
1-5	GENERAL SITE PLAN, RED RIVER ARMY DEPOT, BUILT-UP AREA	1-8
1-6	GENERAL LOCATION MAP, ANNISTON ARMY DEPOT	1-9
2-1	PERSONNEL ACTIONS	2-7
3-1	TOPOGRAPHY/DRAINAGE MAP, PUEBLO DEPOT ACTIVITY	3-5
3-2	WATER TABLE CONTOURS, PUEBLO DEPOT ACTIVITY	3-12
3-3	WELL LOCATION MAP, PUEBLO DEPOT ACTIVITY	3-13
3-4	LOCATION OF AREE'S, PUEBLO DEPOT ACTIVITY	3-40

LIST OF APPENDIXES

<u>No.</u>	<u>Title</u>
A	PUBLIC INVOLVEMENT AND NOTICE OF INTENT
B	CULTURAL DATA
C	U.S. FISH AND WILDLIFE SERVICE CORRESPONDENCE
D	ECONOMIC IMPACT FORECAST SYSTEM
E	COMMENTS AND RESPONSES TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND THE 26 JUNE 1991 PUBLIC MEETING

ACRONYM LIST

ACHP	Advisory Council on Historic Preservation
ACRC	Area Calibration Repair Center
ADEQ	Arizona Department of Environmental Quality
ADT	average daily travel
AMC	Army Materiel Command
AMCCOM	U.S. Army Armament, Munitions and Chemical Command
ANAD	Anniston Army Depot
AOD	area oriented depot
APC	Alabama Power Company
APE	Ammunition Peculiar Equipment
AR	Army Regulation
AREE	area requiring environmental evaluation
BEA	Bureau of Economic Analysis
BRAC	base realignment and closure
BTU	British thermal unit
CDOH	Colorado Department of Health
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHEM DEMIL	chemical demilitarization
CNR	Composite Noise Rating
DA	Department of the Army
dBA	decibels on the A scale
DERP	Defense Environmental Restoration Program
DESCOM	Depot System Command
DLA	Defense Logistics Agency
DNL	day-night level
DNT	dinitrotoluene
DOD	Department of Defense
DOT	Department of Transportation
DRMO	Defense Reutilization and Marketing Office
EIFS	Economic Impact Forecast System
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EP Tox	Extraction Procedures Toxicity
FFA	Federal Facility Agreement
FNSI	Finding of No Significant Impact
FY	fiscal year

ACRONYM LIST (Cont'd)

GD	gallons per day
HABS/HAER	Historic American Buildings Survey/Historic American Engineering Record
HMX	High Melt Explosive
HPP	Historic Preservation Plan
HRS	Hazard Ranking System
HTW	hazardous and toxic waste(s)
ICUZ	Installation Compatible Use Zone
IGU	Inertial Guidance Unit
INF	Intermediate-Range Nuclear Forces
IRP	Installation Restoration Program
ISC	Information Systems Command
kV	kilovolt
kVA	kilovoltampere
kWh	kilowatthour
LOI	level of impact
LSAAP	Lone Star Army Ammunition Plant
LWC	local wind circulation
MEP	Master Environmental Plan
MGD	million gallons per day
mg/kg	milligrams per kilogram
MICOM	U S. Army Missile Command
mm	millimeter
MPH	miles per hour
MSA	metropolitan statistical area
m s.l.	mean sea level
MWD	Metropolitan Water District
NEPA	National Environmental Policy Act of 1969
NICP	National Inventory Control Project
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
OB/OD	open burning/open detonation
OEA	Office of Economic Adjustment
OTC	Ordnance Training Center

ACRONYM LIST (Cont'd)

PA	Preliminary Assessment
PA/SI	Preliminary Assessment/Site Inspection
PCB	polychlorinated biphenyl
PCE	perchloroethylene
PMCD	Program Manager Chemical Demilitarization
ppm	parts per million
PUDA	Pueblo Depot Activity
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
RDX	Research Department Explosive
RFA	RCRA Facilities Assessment
RFI	RCRA Facilities Investigation
RFI/CMS	RCRA Facilities Investigation/Corrective Measures Study
RFNA	red fuming nitric acid
RIF	reduction in force
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RRAD	Red River Army Depot
RTV	Rational Threshold Value
SARA	Superfund Amendments and Reauthorization Act
SEA	Socioeconomic Effects Analysis
SHPO	State Historic Preservation Officer
SIAD	Sierra Army Depot
SWAPDOP	Southwest Asia Petroleum Distribution Operation Project
SWMU	solid waste management unit
TCE	trichloroethylene
TEAD	Tooele Army Depot
TEAD-N	Tooele Army Depot-North Area
TEAD-S	Tooele Army Depot-South Area
TMDE	Test, Measurement and Diagnostic Equipment
TNT	trinitrotoluene
TROSCOM	Troop Support Command
TSCA	Toxic Substances Control Act
TSD	treatment, storage, and disposal activities/facilities
TSP	total suspended particulates
TTC	Transportation Test Center

ACRONYM LIST (Cont'd)

UDMH	unsymmetrical dimethylhydrazine
$\mu\text{g/g}$	micrograms per gram
$\mu\text{g/L}$	micrograms per liter
$\mu\text{g/m}^3$	micrograms per cubic meter
μm^2	square micrometer
USACE	U.S. Army Corps of Engineers
USAEHA	U.S. Army Environmental Hygiene Agency
USATHAMA	U.S. Army Toxic and Hazardous Materials Agency
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
UXO	unexploded ordnance
WSS	U.S. Army Water Support System

1 - PURPOSE AND NEED FOR THE ACTION

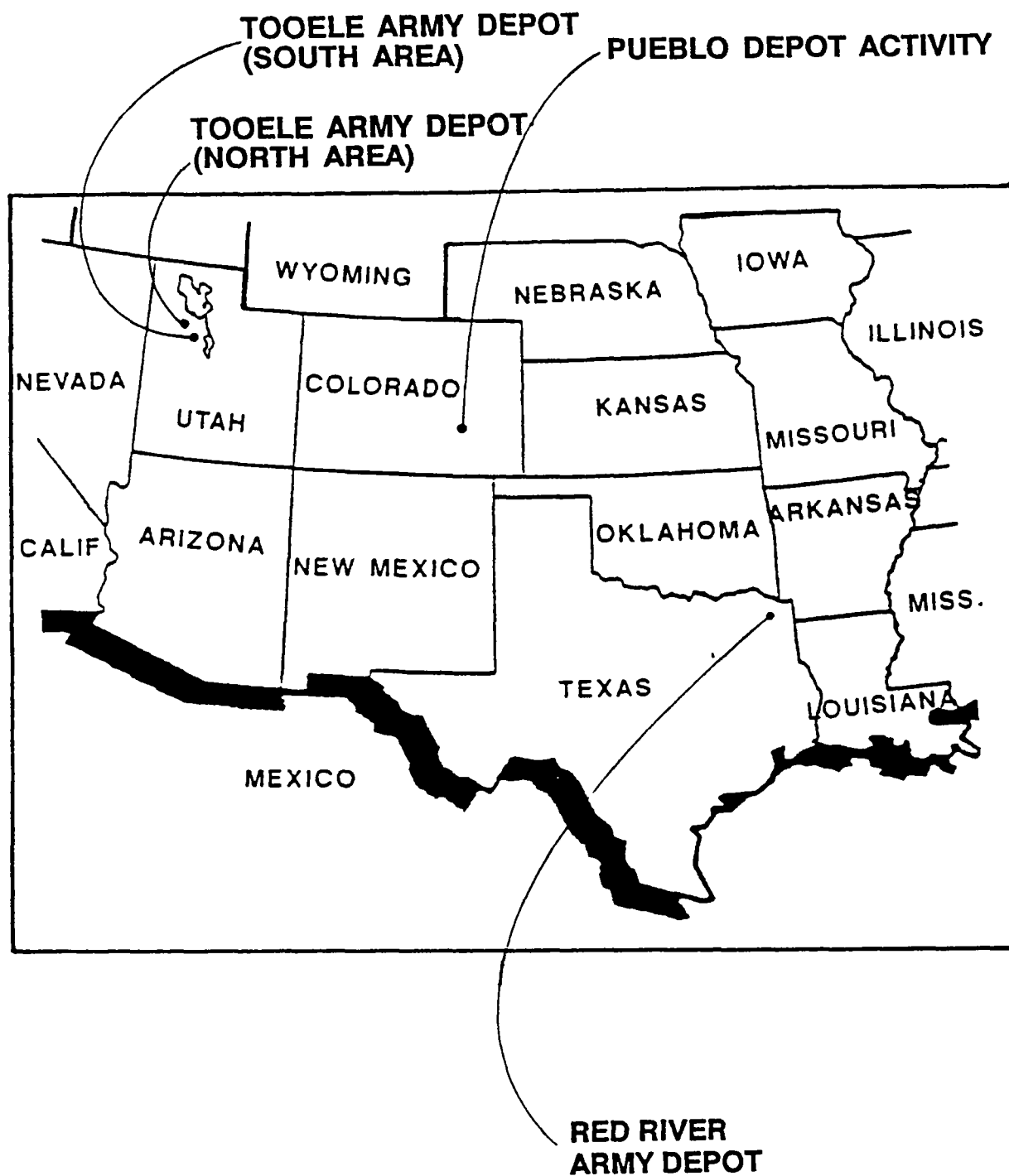
1.0 COMMISSION RECOMMENDATIONS

Pueblo Depot Activity (PUDA) in Colorado was recommended for realignment by the Defense Secretary's Commission on Base Realignment and Closure (Commission). The Commission was chartered on 3 May 1988 to recommend military installations within the United States and its commonwealths, territories, and possessions for realignment and closure. In December 1988, the Commission recommended that 86 military installations be closed, 5 be partially closed, and 54 be increased or decreased (realignment) as units and activities are relocated.

Through Public Law 100-526, the Defense Authorization Amendments and Base Closure and Realignment Act, Congress directed the Secretary of Defense to close or realign all military installations recommended for such action by the Commission in its December 1988 report. This legislation constitutes agreement between the legislative and executive branches that improvement in the military basing structure could be a means of realizing savings in the defense budget without impairing the ability of the Defense Department to carry out its mission.

The Commission's recommendations and the resultant base realignment and closure (BRAC) report include the following three Army Materiel Command (AMC) installations, general locations of these installations are shown in figure 1-1.

- Pueblo Depot Activity, Colorado
- Tooele Army Depot, Utah
- Red River Army Depot, Texas



**FIGURE 1-1
GENERAL LOCATION MAP**

Also, Anniston Army Depot (ANAD), Alabama, is the location of two construction projects that will occur as a result of the Commission's recommendations. In addition, small amounts of materiel and/or small numbers of personnel spaces are to be transferred and/or reassigned to the following installations to meet the intent of the Commission's report.

- Anniston Army Depot, Alabama
- Sierra Army Depot, California
- White Sands Missile Range, New Mexico
- Fort Belvoir, Virginia
- Fort Carson, Colorado
- McAlester Army Ammunition Plant, Oklahoma
- Hawthorne Army Ammunition Plant, Nevada
- Seneca Army Depot, New York
- Crane Army Ammunition Activity, Indiana
- Navajo Depot Activity, Arizona

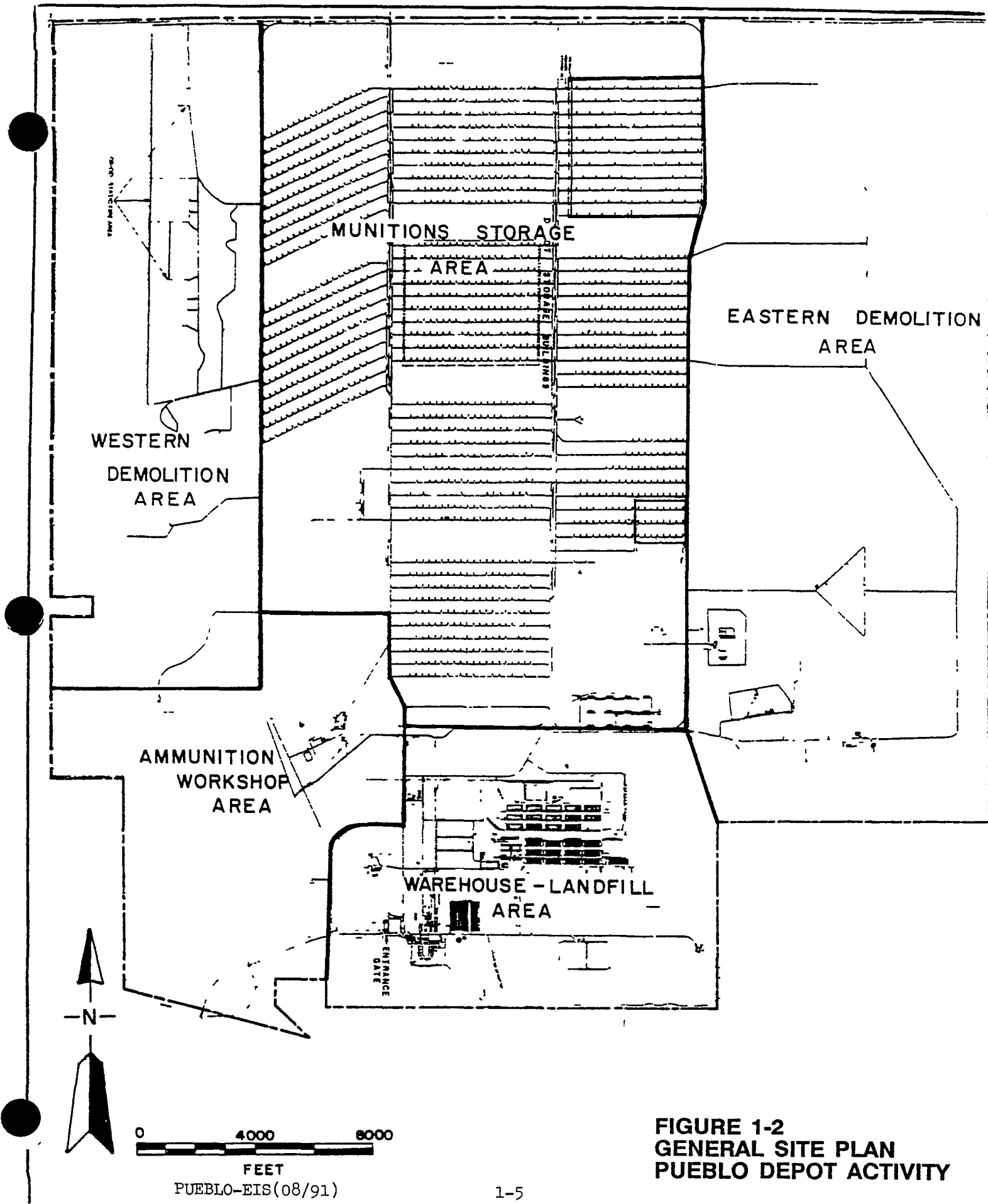
The Commission recommended that the supply mission at PUDA be transferred to Tooele Army Depot (TEAD) and that the conventional ammunition storage mission be transferred to Red River Army Depot (RRAD). The Commission was prevented from closing PUDA because of the chemical demilitarization (CHEM DEMIL) mission. The Army is scheduled to begin elimination of chemical munitions in 1997 and to be completed in 1999, which is outside the Commission's allowed timeframe to complete closures. Consequently, the installation is to be realigned to the maximum extent possible to facilitate closure as soon as the CHEM DEMIL mission is complete. The Commission further recommended that approximately 75 civilian employees remain at PUDA to accomplish environmental monitoring of ammunition storage igloos, munitions handling, munitions transport quality control activities, and security escort duties related to CHEM DEMIL. Additionally, an unspecified number of personnel will be needed

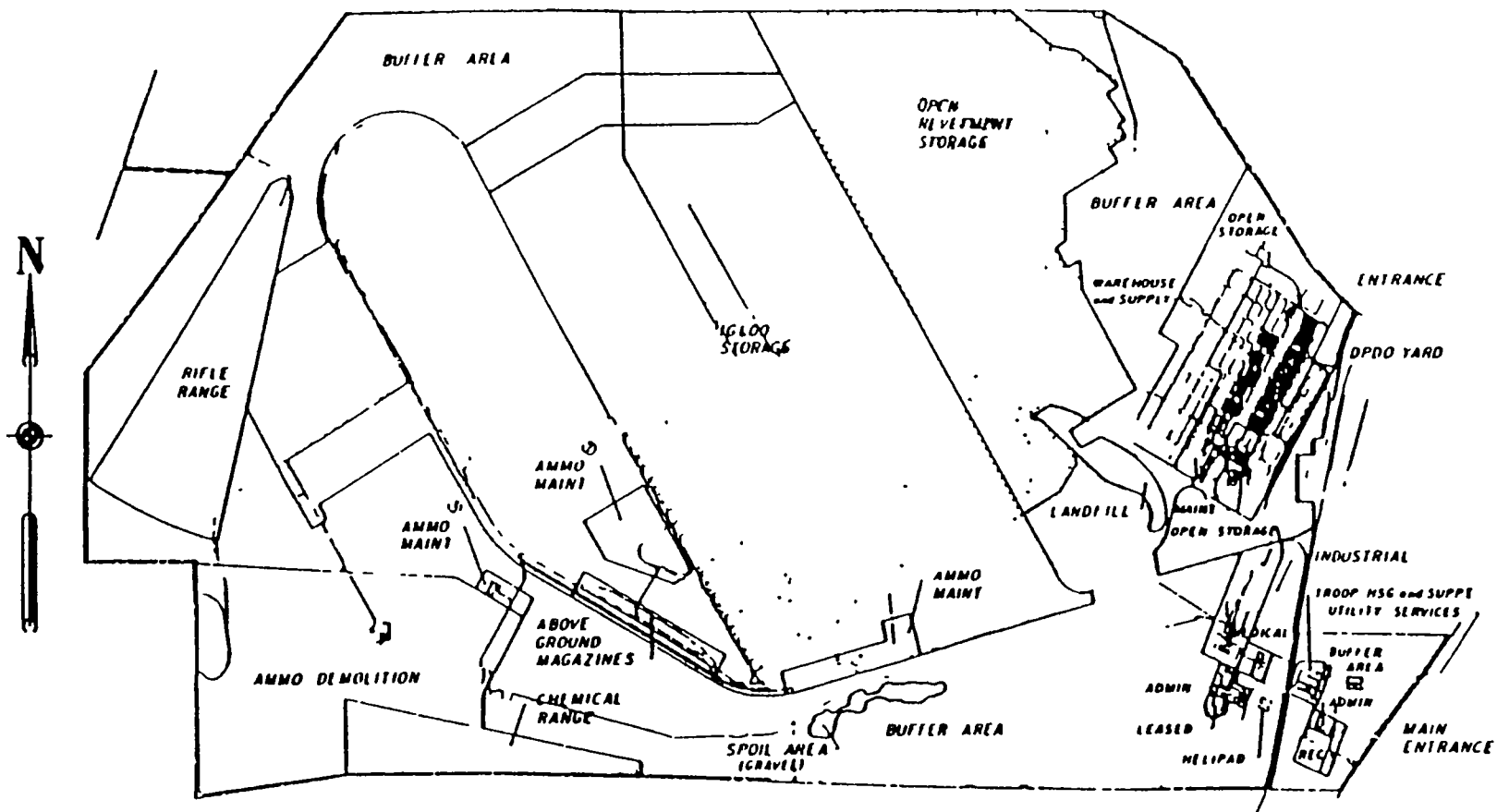
to support such activities as storage site monitoring, laundry operations, and vehicle and road maintenance. The Commission expects annual savings to be \$15.5 million. The Commission excluded the costs of hazardous waste cleanup.

The primary activities involved in the PUDA realignment action are the transfer of the supply mission to TEAD, the transfer of the conventional ammunition mission to RRAD, and the elimination of obsolete conventional ammunition at PUDA. However, some supplies and conventional ammunition stocks will be moved to other AMC locations as operations require. Movements of these supplies and ammunition stocks would follow established procedures and shipping routes. Figures 1-2 through 1-5 present the general locations of facilities at PUDA, TEAD, and RRAD. A fourth primary activity is the transfer of the Army historical property and the Inertial Guidance Unit (IGU) from PUDA to ANAD. Figure 1-6 shows the general location of ANAD.

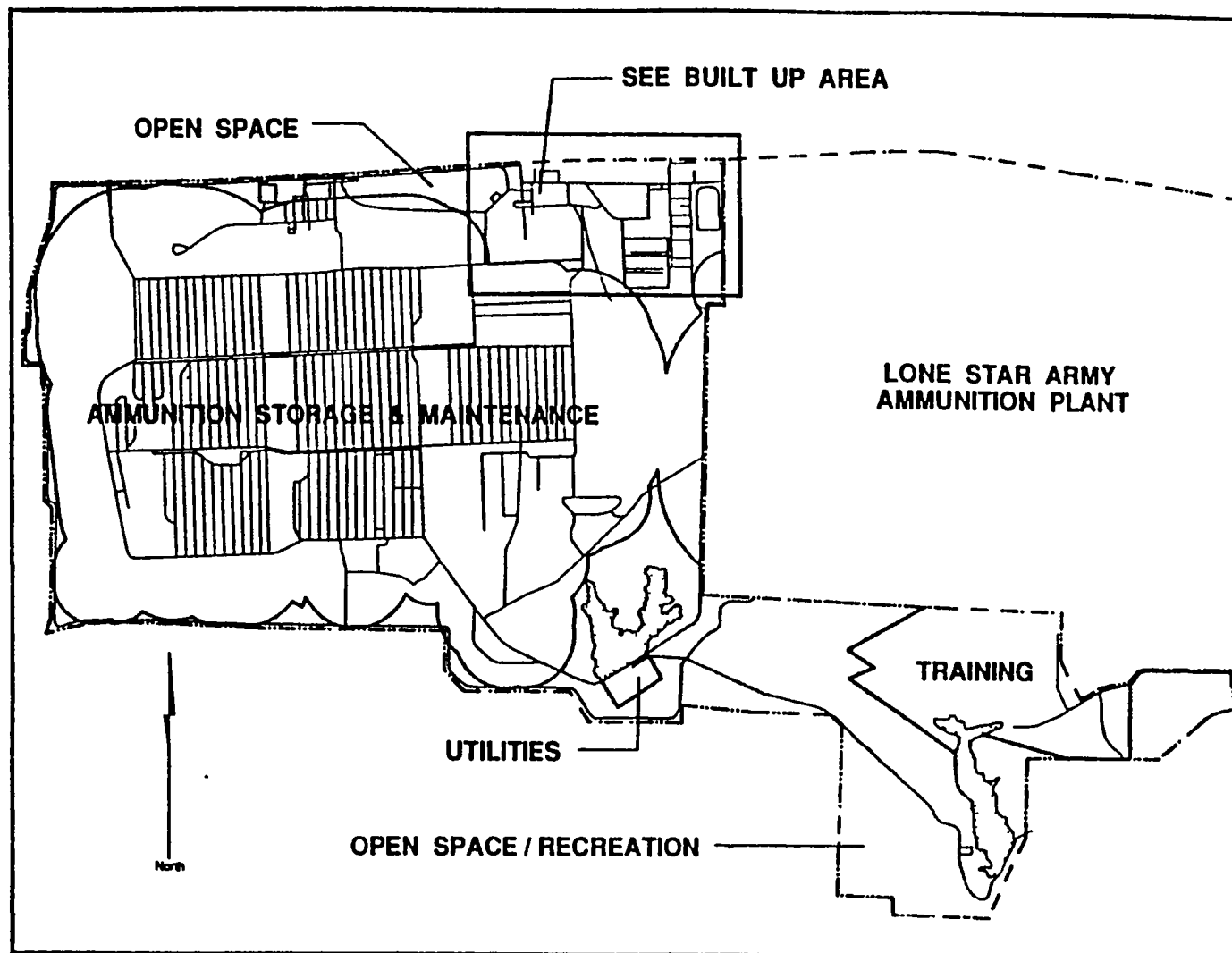
1.1 IMPACT ANALYSIS PROCESS

Section 204(c) of Public Law 100-526 specifies that, in applying the provisions of the National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190), there is no requirement for considering the need for realignment, closure, or transfer of functions to other military installations selected for that purpose. Consideration of other military installations as alternatives to those selected for realignment or closure by the Commission is also exempt from the provisions of NEPA under Public Law 100-526, section 204(c). The alternative use of facilities idled by the realignment of missions at PUDA is not discussed in this Environmental Impact Statement (EIS) because there are no immediate plans to dispose of any of PUDA's real property. This is due to the future CHEM DEMIL mission

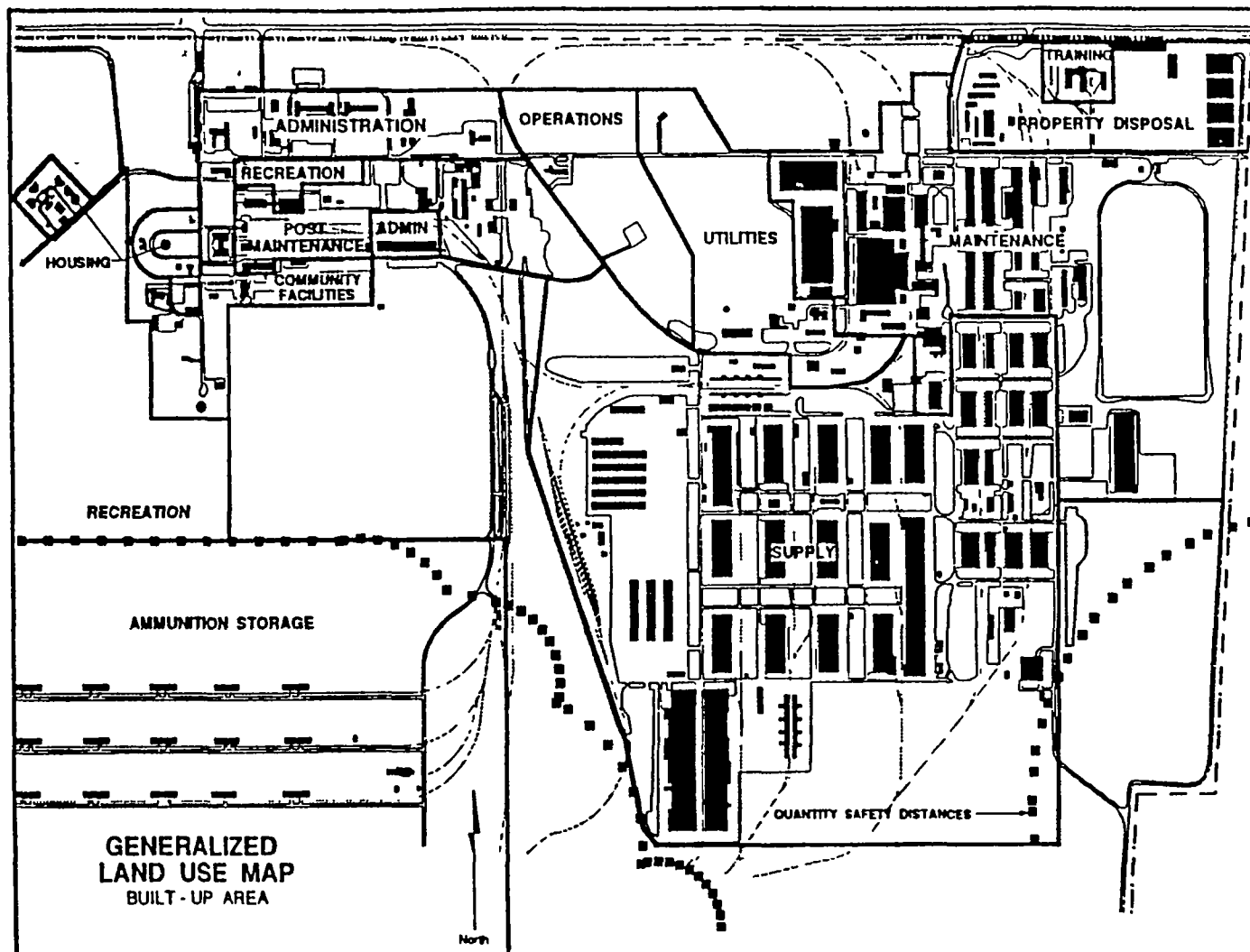




**FIGURE 1-3
GENERAL SITE PLAN
TOOELE ARMY DEPOT NORTH AREA**



**FIGURE 1-4
GENERAL SITE PLAN
RED RIVER ARMY DEPOT**



**FIGURE 1-5
GENERAL SITE PLAN
RED RIVER ARMY DEPOT
BUILT-UP AREA**

and requirements for remediation of existing hazardous waste sites prior to property transfer. Because no real property disposition or alternative use of facilities at TEAD, RRAD, and ANAD is contemplated under this BRAC action, only the realignment action is described for these three installations

This EIS focuses on the effects of the BRAC action as a result of the transfer of the supply mission from PUDA to TEAD, the transfer of the conventional ammunition mission from PUDA to RRAD, the demilitarization of obsolete conventional ammunition at PUDA, and the two construction projects at ANAD to house the Army historical property and the IGU. The EIS includes information that has been gathered from previous reports and coordinated with various agencies and other sources. The socioeconomic analyses, findings, and discussions contained in this EIS are based primarily on Socioeconomic Effects Analysis (SEA) Reports prepared by the U S Army Corps of Engineers' Institute for Water Resources for each installation. In addition, the U.S Army Toxic and Hazardous Materials Agency (USATHAMA) published an Enhanced Preliminary Assessment (PA) in March 1990 outlining the known and suspected hazardous and toxic waste (HTW) problems at PUDA. USATHAMA also published assessments for Sierra Army Depot (SIAD), TEAD, and RRAD.

The Draft EIS was circulated for review and comment to Federal, State, and local agencies and to interested individuals for a 45-day comment period. A notice of document availability appeared in the Federal Register on 31 May 1991, and a public meeting was held on 26 June 1991 to receive oral and/or written comments. All comments received during the 45-day period or at the public meeting were considered in the completion of this Final EIS. A summary of the public meeting comments and a transcript of the meeting are presented in appendix A. Appendix E presents the comments received and the responses to those comments.

1.2 SCOPING MEETINGS

At the beginning of the EIS process, the Army conducted public scoping meetings. These meetings were held in the evening for the convenience of the public. An announcement of these scoping meetings was sent to approximately 250 interested parties. The mailing list included environmental organizations, community groups, Federal and State agencies, members of Congress, Governors, and the general public. The purpose of the scoping meetings was to receive input and comments from interested parties about issues they believed should be considered and addressed in the EIS. The meetings began with an overview of the proposed action and a description of the transfer of functions from PUDA as recommended by the Commission.

The specific issues and major concerns raised at the scoping meetings are presented in appendix A of this document. Several of these issues and concerns are addressed in this EIS, however, some of the issues, such as reuse of PUDA property, are beyond the scope of this EIS and will be discussed in separate NEPA analysis. Partial closure of PUDA and disposal of any excess property, although authorized by BRAC, are not discussed in this document. There is no current Army proposal to partially close and dispose of portions of PUDA because of existing environmental cleanup requirements and existing support requirements for the CHEM DEMIL mission. Should the Army subsequently propose to close and dispose of a portion of PUDA, additional NEPA analyses will be conducted on that proposed action.

2 - ALTERNATIVES CONSIDERED

2.0 INTRODUCTION

No alternatives to the realignment of PUDA exist because of the legislation associated with the action. Public Law 100-526 specifically states that the Secretary of Defense, in applying the provisions of NEPA, shall not have to consider alternative military installations to those selected. Although Public Law 100-526 does not require consideration of alternatives, NEPA requires consideration of the No Action alternative, which in this case would be the continued operation of the installation. Although implementation of the No Action alternative is not presently within the authority of the Department of the Army (DA), the alternative is included in this EIS as a baseline for comparative purposes. To make the No Action alternative a viable alternative, congressional action to rescind Public Law 100-526 would be required.

2.1 PROPOSED ACTIONS

2.1.1 Description of the Actions

The specific BRAC actions described in this EIS are the transfer of the PUDA supply mission to TEAD, the transfer of the conventional ammunition mission from PUDA to RRAD, the demilitarization of obsolete conventional ammunition at PUDA, and the drawdown of personnel and equipment to a level sufficient to support static storage of chemical munitions pending Chemical Stockpile Disposal Program action. The Army plans to leave Defense Logistics Agency (DLA) strategic and critical stocks, with the exception of the rubber currently maintained in covered storage, in place at PUDA. Also, the Southwest Asia Petroleum

Distribution Operation Project (SWAPDOP), a petroleum distribution system, and the U S Army Water Support System (WSS), water distribution system equipment, will be transferred to SIAD. The collection of Army-specific historical artifacts, approximately 150,000 objects, and the IGU will be transferred to ANAD

Mobilization stock for the Third U S Army will be shipped to Fort Carson. Stocks currently stored at PUDA for Fort Carson will also be shipped there. The warehouse requirements at Fort Carson are documented in a Record of Environmental Consideration titled "General Purpose Warehouse, Fort Carson, CO" dated 24 May 1990 and in an environmental assessment titled "Purchase of the Stevenson Warehouse and Site (12.6 Acres)" dated 19 March 1991. Current plans call for the quantities of conventional ammunition to be reduced through attrition, demilitarization, and disposal. This means that receipts of ammunition stocks at PUDA are limited to the Intermediate-Range Nuclear Forces (INF) treaty items. Conventional ammunition now in long-term storage at PUDA will be moved to RRAD or to other ammunition storage facilities. Conventional ammunition items that cannot be moved because of safety concerns will be demilitarized at the current facility; obsolete ammunition items will be demilitarized either at PUDA's existing facility or at several selected installations. All demilitarization will be accomplished following established procedures for demilitarization (disposal) of conventional ammunition. The destination and the quantities of materiel to be shipped, by type, are presented in table 2-1. These figures are as of October 1990, quantities may change because of operational requirements

2 1.2 Manpower Summary

Information for this section was taken from the Headquarters, Department of the Army, Base Realignment and Closure Execution Plan (DA

Table 2-1
Distribution of Materiel from PUDA ^{1/}
(in short tons)

<u>Destination</u>	<u>Conventional Ammunition</u>		<u>General Supplies</u>	<u>Special Equipment and Stocks</u>	<u>DLA Stocks</u>	<u>Total</u>
	<u>Long-Term Storage</u>	<u>Demilitarization</u>				
Tooele Army Depot	5,700	800	63,000			69,500
Red River Army Depot	27,600					27,600
Anniston Army Depot	100			900		1,000
Fort Carson				2,600		2,600
Hawthorne Army Ammuni- tion Plant	3,700					3,700
McAlester Army Ammunition Plant	7,600	<100				7,600
Navajo Depot Activity		100			37,600	37,700
Seneca Army Depot	2,200					2,200
Sierra Army Depot	2,500	6,900		41,000		50,400

Table 2-1 (Cont'd)
Distribution of Materiel from PUDA ^{1/}
(in short tons)

<u>Destination</u>	<u>Conventional Ammunition</u>		<u>General Supplies</u>	<u>Special Equipment and Stocks</u>	<u>DLA Stocks</u>	<u>Total</u>
	<u>Long-Term Storage</u>	<u>Demilitarization</u>				
Small Activities	500	<100 ^{2/}				500
Miscellaneous Activities	400					400
Defense Reutil- ization and Marketing Office	2,500					2,500
Retained at Pueblo Depot Activity		3,400			32,500	35,900
Unknown	_____	<u>7,000</u> ^{3/}	_____	_____	_____	<u>7,000</u>
Total	52,800	18,200	63,000	44,500	70,100	248,600

^{1/} Figures are rounded to the nearest hundred.

^{2/} This includes Crane Army Ammunition Activity and an unknown location

^{3/} These are U.S. Army Missile Command (MICOM) stocks and are not the responsibility of U.S. Armament, Munitions and Chemical Command (AMCCOM).

Sources: Accountable Records on National Inventory Control Project (NICP), AMCCOM, Rock Island, Illinois, 1 October 1990; verbal communication, PUDA, October 1990.

Execution Plan), March 1990, a plan for executing/implementing the Commission's recommendations. Recommendations for relocation of all the affected tenants within the installations that will be realigned or closed are also included within the DA Execution Plan.

2.1.2.1 Authorization

The baseline authorization (including Army tenants) for PUDA is as follows.

<u>Authorization</u>			<u>Activity</u>
<u>Civilian</u>	<u>Military</u>	<u>Total</u>	
638	4	642	PUDA
5	-	5	Health Services Command (tenant)
22	-	22	Information Systems Command (tenant)
<u>20</u>	<u>3</u>	<u>23</u>	Area Calibration Repair Center (tenant)
685	7	692	Total

2.1.2.2 Transfers

- **Supply Mission** The general supply mission and 116 civilian spaces will transfer to TEAD.

- **Conventional Ammunition Mission** The conventional ammunition mission and 61 civilian spaces will transfer to RRAD.

- **Health Services Command** Two civilian spaces will transfer to Fort Belvoir.

- **Area Calibration Repair Center** The Area Calibration Repair Center (ACRC) will be disbanded at PUDA. Of the 23 spaces identified in the baseline authorization, 16 civilian and 3 military spaces will be

transferred to the U S Army Test, Measurement and Diagnostic Equipment (TMDE) Support Center, a tenant located at White Sands Missile Range.

2.1.2.3 Gains

There will be no manpower gains at PUDA associated with this realignment.

2.1.2.4 Eliminations

As a result of this realignment, 415 civilian spaces (including 9 spaces at Information Systems Command (ISC) and 4 at the ACRC) will be eliminated 5 in fiscal year 1991 (FY 91), 127 in FY 93, 4 in FY 94, and 279 in FY 95.

2.1.2.5 Results

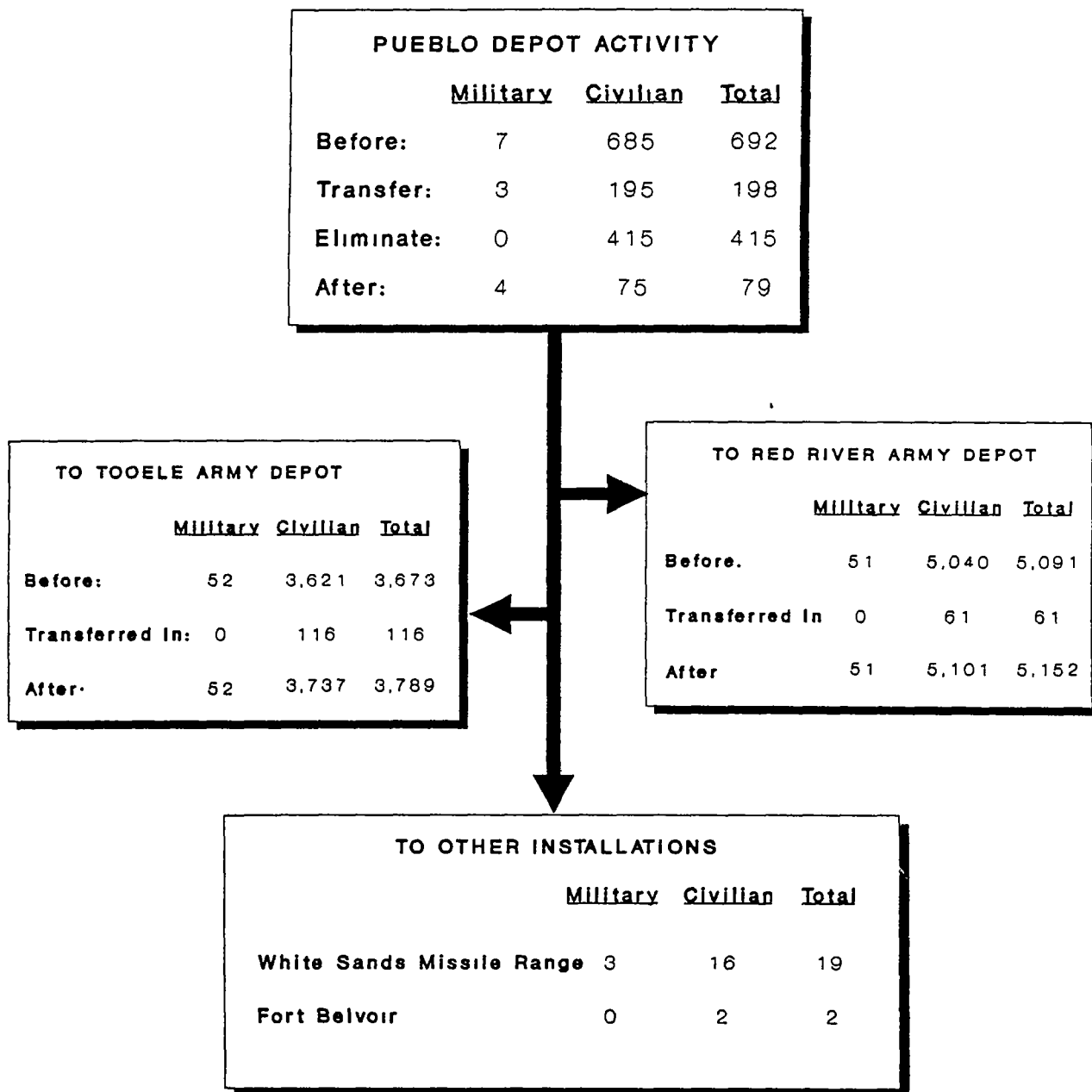
After realignment, 79 spaces (75 civilian and 4 military) will remain at PUDA to perform environmental monitoring of ammunition storage igloos, munitions handling, munitions transport quality control activities, and security escort duties. A summary of the personnel actions associated with this realignment is presented in figure 2-1.

2.1.3 Stock Movement and Disposal Summary

2.1.3.1 Conventional Ammunition Stock Shipments

The conventional ammunition stocks include artillery shells, small arms ammunition, aerial bombs, bomb fin assemblies, bomb casings, explosive propellants, rockets, rocket parts and motors, rocket igniters, detonators and percussion fuses, flares, packing devices and containers for explosives and shells, and handgrenades. Part of the conventional

PUEBLO DEPOT ACTIVITY



ammunition will be retained at PUDA or shipped elsewhere for demilitarization. The kinds of ammunition to be demilitarized include 3 5-inch rockets, cluster bombs, 75 millimeter (mm), 90 mm, and 105 mm shells, MK3 grenades; small arms ammunition, and rocket motors.

2 1 3 1 1 Background

The level of activity associated with the conventional ammunition supply mission varies within the capability defined by staffing and facilities. Since 1978, total PUDA civilian staffing has averaged about 700, it reached a peak of 821 in 1981, and has been about 640 since 1988. Direct operational support facilities include an internal transportation and handling network with 48 miles of rail and 169 miles of roads, 32 general supply warehouses, 922 earth-covered ammunition igloos, 12 aboveground ammunition storage magazines, 7 ammunition workshop buildings, and open burning and open detonation (OB/OD) areas.

The movement capability associated with these staffing and facility capabilities over the past 5 years has been about 42,000 tons of ammunition per year. However, ammunition shipments to and from PUDA are variable and contingent on changes in the various Army missions supported by PUDA. Table 2-2 presents recent movements of conventional ammunition to and from PUDA.

Transportation of explosives is strictly governed by Department of Transportation (DOT) and Army regulations. Local installation procedures also exist for ammunition transportation within PUDA. Before exiting PUDA, loaded transport units are inspected (1) to ensure proper loading, placarding, and bracing and (2) to ensure that the quantity of explosives and the number of authorized operators and transients are not exceeded.

Table 2-2
Movement of Conventional Ammunition at PUDA
(in thousands of tons)

<u>Fiscal Year</u>	<u>Receipts</u>	<u>Shipments</u>	<u>Total Movements</u>
85	20	42	62
86	11	18	29
87	44	28	72
88	27	33	60
89	39	38	77

Source: Standard Depot System, Program Status Report, Depot System Command (DESCOM), September of the applicable fiscal year

There are also constraints governing the highways and city streets which are used to transport hazardous materials. These constraints include Federal, State, and local regulations that control which roads can or cannot be used for transporting these materials. Within these limitations, the transportation routes to the destination points are determined by the carriers.

Available records for the past 5 years indicate that three accidents involving commercial shipments of hazardous materials from PUDA have occurred. Emergency response teams and the Pueblo Fire Department are available to respond to a hazardous materials spill on or near PUDA.

The conventional ammunition demilitarization facilities include an open burning area and open detonation pits for operations which have interim status as designated by the Environmental Protection Agency (EPA). PUDA will request demilitarization limits of 4,300 tons for FY 91, 300 tons for FY 92, 1,900 tons for FY 93, and 500 tons for FY 94, these limits are within interim status capacity requirements. Currently, PUDA is doing conventional ammunition and missile demilitarization.

2 1 3 1 2 Conventional Ammunition Shipments

The movement and disposal of conventional ammunition stocks at PUDA would be accomplished to the extent practicable by balancing the ammunition support workload at depot activities throughout the Army. This requires that some types of ammunition be shipped to installations other than RRAD, even though it is the primary receiving installation. As of August 1990, approximately 90,000 tons of ammunition are to be shipped from PUDA. This is presented in table 2-3. The shipments would be scheduled to remain within the current shipping capability limits of approximately 42,000 tons per year. Ammunition transportation will be by truck or rail, whichever method is most cost efficient.

Table 2-3
Planned Movement of Conventional Ammunition at PUDA
(in thousands of tons)

<u>Fiscal Year</u>	<u>Receipts</u>	<u>Shipments</u>	<u>Total Movements</u>
91	0	24	24
92	0	24	24
93	0	24	24
94	0	18	18
95	0	0	0

Source Standard Depot System, Ammo Lot File Summary, August 1990.

2 1 3 1 3 Conventional Ammunition Demilitarization

Some conventional ammunition stored for long periods may no longer serve a useful purpose because of weapon system obsolescence or high maintenance costs. Individual lots of ammunition in this category are, as appropriate, selected for demilitarization. Demilitarization generally refers to the rendering of a military supply item into a condition in which it cannot be used for its intended military purpose. With respect

to ammunition, this usually means that the propellant and explosive charges are removed from the item, separated, and then either burned or detonated. For most explosive-filled conventional ammunition, demilitarization is accomplished by burning items such as propellants and detonating items such as high-explosive shells. Unserviceable crating and packing materials that contain substantial explosive residue also are burned as a part of the demilitarization process.

Assignment of ammunition items to a centralized demilitarization account or classification of the items as unserviceable is not a designation of the items as being waste. Ammunition and ordnance become waste when specifically designated as waste. Specific designation as waste includes the disposal of items from open detonation or other thermal treatment resulting from the demilitarization process. The point at which ammunition or ordnance becomes waste defines the point at which Resource Conservation and Recovery Act (RCRA) hazardous waste management requirements apply. This is normally when the ammunition transfer record or its equivalent is signed, indicating the receipt of the materiel at the demilitarization facility, such as an open detonation area, incinerator, or other treatment facility.

The Army plans to eliminate unserviceable conventional ammunition to the maximum extent possible using current demilitarization procedures of OB/OD. This approach is cost efficient and precludes the shipment of unserviceable conventional ammunition to an installation which may not be permitted to perform the demilitarization operations.

2.1.3.2 General Supply Stock Shipments

The movement of PUDA supply mission stocks to TEAD is currently scheduled to start in September 1993. These supply stocks include electronic components, tires, motors, generators, wheeled and tracked

vehicles, bridging equipment, chain, cable, inert missile containers, aviation repair parts, guided missile components, and common hardware. The start date was computed to allow for the construction of required storage facilities at TEAD. This transfer will be completed by September 1995. The date for transfer of DLA rubber stocks is not known at this time. Movement of SWAPDOP and the WSS stocks to SIAD is scheduled to begin in FY 92. However, the Army is reviewing the decision to store stocks at only SIAD in the continental United States. Army historical artifacts will be shipped to ANAD after completion of the new facility to house the property. After transfer of all supply mission stocks, a drawdown period will be required to accommodate the personnel, equipment, and facility actions required to enter into the static storage of chemical munitions phase by September 1995.

2.1.3.3.1 Army Historical Artifacts Storage Stocks and Inertial Guidance Unit

The Army historical artifacts currently located at PUDA will be transferred to ANAD. The date for transfer is not known at this time. Construction of a 44,000-square-foot building with a 6,000-square-foot loading dock and a 60-ton air conditioning unit to provide an environmentally controlled area to house approximately 230,000 Army historical artifacts (approximately 150,000 will be transferred from PUDA) is required. The facility will include areas for loading, processing, shipping, and storing artifacts, as well as administrative and records holding areas. Construction is estimated to be completed in April 1994.

The IGU currently located at PUDA will also be transferred to ANAD. This involves the transfer of the existing modular environmental laboratory complex and other equipment directly associated with the IGU. Movement of this property could begin after construction is completed at ANAD, currently scheduled for April 1993. The new facility will provide

the capability for maintenance, disassembly and assembly, test and repair, cleaning, and calibration, an attached administrative annex with required support facilities; and mechanical spaces. Special features will include a modular environmental laboratory complex to provide both clean room and super clean room areas, conductive flooring, laminar flow work stations, air locks, astronomical survey monuments, isolated seismic pads, and a high pressure air compressor. The maintenance facility will contain 8,100 square feet of area.

2.1.3.3.2 Southwest Asia Petroleum Distribution Operation Project and the U.S. Army Water Support System

The SWAPDOP and WSS stocks will be transferred to SIAD beginning in FY 92. Transfer of these stocks was not specifically described in the Commission's report. Therefore, this EIS considers alternatives to locating the SWAPDOP and WSS stocks to SIAD.

SWAPDOP equipment consists of pipeline, pump stations, storage facilities for petroleum, and other equipment necessary to distribute petroleum in southwest Asia as well as in other locations.

WSS equipment consists of the water storage, distribution, purification, and chilling equipment necessary to support the U.S. Central Command in an undeveloped theater of operations. Specifically, this equipment includes fabric tanks, centrifugal pumps, hypochlorination units, hoseline, reverse osmosis water purification units, water drums, small mobile water chillers, manifolding, and other hardware. The WSS equipment is currently stored and maintained in an operational readiness state at PUDA.

2.2 ALTERNATIVES TO THE PROPOSED ACTION

In the following discussion on alternatives, a No Action alternative is identified. Although this option is not presently available to the Army because realignment is legally mandated by Public Law 100-526, it is included as a baseline for comparative purposes. In addition to the No Action alternative, other alternatives pertinent to the realignment of PUDA are identified. Also included are discussions of alternative ways of implementing the realignment at several receiving installations.

- **Alternative 1 - No Action Alternative** This alternative would be the continuation of the mission at PUDA as it exists today.

The realignment mandate in Public Law 100-526 specifies that the recommendations of the Commission be followed and that the realignment process be completed within a strict timeframe. These conditions severely limited the options that could be considered as viable alternatives for proceeding with the PUDA realignment. Two alternatives were identified, however, and each was given at least initial consideration.

- **Alternative 2 - Modified Implementation Schedule** This alternative would involve implementing the realignment using a schedule slower than that identified in the DA Execution Plan.

- **Alternative 3 - Existing Implementation Plan.** This alternative is implementing the realignment essentially as specified in the DA Execution Plan.

2 3 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

2.3.1 Alternative 1 - No Action Alternative

This alternative is by definition a continuation of the existing or baseline conditions described in the Affected Environment section of this EIS. Table 2-5 (located later in this section), which compares the various alternatives, identifies the existing conditions as also being the No Action alternative impacts. This alternative was eliminated from further consideration because, under Public Law 100-526, it is not presently an option available to the Army.

2.3.2 Alternative 2 - Modified Implementation Schedule

The specific timeframe mandated by Public Law 100-526 effectively limits the flexibility possible in scheduling the realignment of PUDA. The statutory schedule includes the following requirements: (1) initiate all closures and realignments no later than 30 September 1991, (2) do not initiate any closures or realignments before 1 January 1990, and (3) complete all closures and realignments no later than 30 September 1995.

The proposed schedule for the PUDA realignment (alternative 3) will require nearly the full time period allotted (personnel transfers are to be finalized by July 1995). However, consideration was given to slowing down the schedule to complete the realignment process.

The Army is scheduled to begin onsite destruction of chemical munitions in 1997, and the demilitarization operation is scheduled to be completed in 1999. This mission prevented the Commission from closing PUDA by September 1995. Consideration was given to slowing down the schedule to accomplish the realignment process and closure of PUDA simultaneously. No further analysis of this alternative was done,

however, because postponing the realignment to coincide with closure does not meet the schedule mandated by Public Law 100-526

Because this alternative could not prescribe a realistic course of action for realigning PUDA given the legal constraints imposed on the process, it was not considered further.

2.4 ALTERNATIVES CONSIDERED IN DETAIL

2.4 1 Alternative 3 - Existing Implementation Plan

Based on constraints dictated by the process timeframe, implementation according to the DA Execution Plan is the only viable alternative for the realignment of PUDA. The time schedule in this plan is favorable for an orderly realignment process. Preparations for socioeconomic changes and the environmental consequences of the realignment would also occur during this period, although minimal or no impacts are expected to result in these areas.

2.4.1.1 Alternatives for Implementing the Transfers

To avoid construction, to use existing available space, and to distribute the workload to reduce or eliminate additional cost and workload impacts as a result of realignment, storage stocks were redistributed to appropriate alternative sites. PUDA stocks are being transferred to SIAD, ANAD, Hawthorne Army Ammunition Plant, McAlester Army Ammunition Plant, Navajo Depot Activity, Seneca Army Depot, and Fort Carson. Small amounts of stocks may be moved to Crane Army Ammunition Activity. It is also expected that some stock quantities may fluctuate because of an increase or a decrease in expected attrition stocks. Specific adjustments should be made in that case or other unique cases.

2.4.1.1.1 Transfer of the General Supply Mission

Transfer of the supply mission to TEAD includes the transfer of 116 civilian spaces. This supply mission generally consists of receiving, storing, issuing, maintaining, and disposing of supplies as directed by higher headquarters.

Moving the general supply mission stocks to TEAD requires the construction of only one new warehouse. Construction will take place on a previously disturbed parcel of land in the northeast part of the installation. In addition, five existing shop buildings will be renovated to warehouse space. These shop buildings are scheduled to be vacated in FY 92 and are, therefore, logical choices for renovation.

2.4.1.1.2 Transfer of the Conventional Ammunition Mission

Transfer of the conventional ammunition mission to RRAD includes the transfer of 61 civilian spaces. All functions related to the mission would be transferred; i.e., shipment, demilitarization, care of materiel in storage, and shipment to customers other than RRAD. The transfer of PUDA's stocks would be accomplished to the extent practicable by balancing the workload at depots throughout the Army.

No new construction is associated with transfer of this mission. Existing facilities at RRAD and other receiving depots can accommodate all functions associated with the mission.

2 4 1 2 Other Actions

2 4 1 2.1 Transfer of the Southwest Asia Petroleum Distribution Operation and U S. Army Water Support System Stocks to Sierra Army Depot

The SWAPDOP and WSS stocks will be relocated to SIAD. SWAPDOP stocks consist of standard petroleum equipment that provides the materiel capabilities and planning documentation required to support a committed force with bulk petroleum products. WSS stocks consist of water storage, distribution, purification, and chilling equipment necessary to support the U S. Central Command in an undeveloped theater of operations. SWAPDOP and WSS stocks were originally scheduled to be transferred to TEAD. Modification and/or construction of storage facilities, however, would have been required; therefore, these two stocks will be relocated to SIAD because SIAD can accommodate the missions without the construction of additional storage facilities and without additional manpower, and there would be no environmental impacts.

2 4.1.2 2 Transfer of the Army Historical Property and the Inertial Guidance Unit to Anniston Army Depot

The historical artifacts, consisting of some 150,000 Army objects, will be transferred to ANAD. Moving the historical property requires the construction of a controlled humidity warehouse. Alteration/modification of existing facilities is not a viable option. The cost of leasing a suitable facility to house this mission would equal or exceed the cost of the proposed facility. ANAD currently stores U.S. Army historical weapons. Also, because the historical weapons mission is already at ANAD, it would involve further costs for the Army to place the weapons at one location and the historical property at another. In addition, an East Coast area as close to Washington, D C., as possible would ensure adequate

supervision, control, and accountability by the Center of Military History.

The IGU facility construction at ANAD will provide for a continued capability to repair, test, and calibrate guidance units in existing and planned missile and weapon systems such as the MLRS, M1-A2 tank and helicopters, and other aircraft. The laboratory and related IGU equipment will be relocated from PUDA to ANAD. Alternatives considered to accomplishing this mission at ANAD were alteration/addition to existing facilities and new construction. Alteration/addition of facilities is not a viable alternative based on the strict mission requirements. The vibration sensitivity and the placing of survey monuments facing true north preclude using any building already in place. New construction is the only viable alternative.

2.4.1 2.3 Miscellaneous Transfers

Military materiel and equipment and conventional ammunition for long-term storage and demilitarization will be transferred to various locations.

2.4.1.2.3.1 Military Materiel and Equipment

- **Third U.S. Army Mobilization Equipment.** Mobilization equipment for the Third U.S. Army will be moved to Fort Carson. Alternatives to this location include depots with sufficient storage or potential storage to house the equipment. Because of security reasons, public storage facilities were not considered. Sites requiring new construction were eliminated because of cost. Other sites having sufficient existing storage capacity were eliminated because of management and logistic considerations. The amount of equipment to be moved is relatively small,

1,100 tons, and will not have an appreciable environmental effect on the receiving installation

- **Fort Carson Stocks** Military materiel belonging to Fort Carson will be moved to that installation. Alternatives to this location include military installations and public facilities. Public facilities were not considered because of security reasons. The materiel is being moved to Fort Carson for management and logistic reasons. The amount is relatively small, 1,500 tons, and will not have an appreciable environmental effect.

2.4.1.2 3 2 Conventional Ammunition

- **Long-term Storage** Conventional ammunition is being shipped to several receiving locations in addition to RRAD. As shown in table 2-1, these include Hawthorne Army Ammunition Plant, McAlester Army Ammunition Plant, Seneca Army Depot, SIAD, and several other installations. Alternatives to these locations include depots with sufficient storage or potential storage to accommodate the quantities and types of ammunition displaced by realignment. Public storage facilities were not considered because of security reasons. Sites requiring new construction were eliminated because of cost. Because the environmental effects would not vary appreciably among installations, the decision to use the selected installations was based on management and logistic considerations.

- **Conventional Ammunition Demilitarization.** Conventional ammunition determined to be no longer required for possible Army requirements will be demilitarized at PUDA and possibly at several other locations as shown in table 2-1. PUDA has a large demilitarization responsibility during the realignment timeframe. Whenever possible, conventional ammunition will be demilitarized at PUDA to avoid additional handling and transportation. Defective ammunition will be demilitarized at PUDA for safety reasons. Some ammunition will be shipped to other locations for determination as

to ultimate disposition. The locations shown in table 2-1 were selected based on their existing or proposed demilitarization activities. SIAD will receive the largest amount of ammunition that may require disposition and eventual demilitarization. Materiel that may be demilitarized includes rockets, cluster bombs, artillery shells and propellants, small arms, MK3 grenades, rocket motors, and miscellaneous ammunition.

2.4.1.2.4 Transportation Alternatives

Truck and rail are the two modes of transportation available at PUDA. These modes can be combined in varying proportions, creating a multitude of potential alternatives. The full range of transportation alternatives is bracketed by 100 percent truck and 100 percent rail. To provide a full evaluation, three transportation alternatives were considered. These are 100 percent truck, 100 percent rail, and a 40/60 truck/rail split. The latter is based on what is believed to be a probable mix.

Table 2-4 compares the all-truck and all-rail alternatives with regard to energy use, air emissions, cost, noise, and safety over the total movement timeframe required for the realignment actions. Transport by rail would result in less energy use and less emission of air pollutants; however, the ultimate determination on the mode of transport will be based on economic considerations at the time of shipment.

Table 2-4
Transportation Impact Summary

<u>Resource</u>	<u>All Truck</u>	<u>All Rail</u>	<u>Difference</u>
Energy (gallons of diesel fuel)	1,211,700	435,300	776,400
Air Emissions (tons of pollutants)	305	145	160
Cost (\$1,000)	\$11,045	\$10,598	\$447
Noise	Minor	Minor	Negligible
Safety	Minor	Minor	Negligible

2 4.1.2.5 Reformulation of the Information Systems Command Mission

ISC, a tenant at PUDA, will retain 13 civilian spaces at PUDA to support the CHEM DEMIL mission. ISC's mission includes managing a communications center, providing support for computer services, directing mailroom activities, and processing data. The elimination of 9 of its 22 employees is evaluated in this EIS.

2 4 1 2 6 Discontinuance of the Area Calibration Repair Center

The ACRC another tenant at PUDA, is being realigned to White Sands Missile Range and Sacramento Army Depot. Some spaces will also be transferred. As with the ISC activity, this EIS considers only the impacts of eliminating the mission at PUDA.

2.5 IMPACTS

Impacts associated with the realignment action at PUDA, TEAD, RRAD, ANAD, and SIAD are summarized in table 2-5.

Table 2-5
Impact Summary ^{1/}

<u>Resource</u>	<u>PUDA</u>		<u>TEAD</u>		<u>RRAD</u>		<u>ANAD</u>		<u>SIAD</u>	
	<u>No</u> <u>Action</u>	<u>Realign-</u> <u>ment</u>	<u>No</u> <u>Action</u>	<u>Realign-</u> <u>ment</u>	<u>No</u> <u>Action</u>	<u>Realign-</u> <u>ment</u>	<u>No</u> <u>Action</u>	<u>Realign-</u> <u>ment</u>	<u>No</u> <u>Action</u>	<u>Realign-</u> <u>ment</u>
Physical Environment										
Climate	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Soils	NS	TA	NS	TA	NS	TA	NS	TA	NS	NS
Water Resources	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Noise	NS	TA	NS	TA	NS	TA	NS	TA	NS	TA
Air Quality	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Biological Resources	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cultural Resources	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Socioeconomic Resources										
Population	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Employment	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Income	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Housing	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Schools	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Transportation	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Utilities	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Hazardous and Toxic										
Wastes	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

^{1/} The installations that will be receiving small amounts of materiel and/or personnel spaces from the realignment of PUDA are not specifically listed here. There could be some temporary adverse impacts during receipt of stocks at these installations, however, any impact would be insignificant

S - significant effect
 PS - potentially significant adverse effect
 NS - no significant adverse effect
 B - beneficial effect
 TB - temporary insignificant beneficial effect
 TA - temporary insignificant adverse effect

2 6 OFFICE OF ECONOMIC ADJUSTMENT INVOLVEMENT

The Department of Defense (DOD) Office of Economic Adjustment (OEA) has been involved in the Pueblo community since the original BRAC announcement was made in late 1988. Economic adjustment assistance to communities is a process by which organization, planning, and resources are joined to maintain or restore community stability. The Pueblo County Department of Planning and Development has formed a reuse committee. A representative of the U S Army Corps of Engineers (USACE) Omaha District has been invited to participate in committee meetings. The OEA will coordinate with this committee in providing economic adjustment assistance to the area. Because there are no immediate plans to dispose of any of PUDA's real property, the activities of the reuse committee have been suspended until such time as the Army declares portions of PUDA ready for disposal.

2 7 CUMULATIVE EFFECTS

Cumulative effects are the impacts (direct or indirect) on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over time (40 CFR 1508.7). A discussion of cumulative effects at PUDA, TEAD, and RRAD follows.

2.7 1 Pueblo Depot Activity

2.7.1 1 International Agreements

Four international agreements involve PUDA one congressionally mandated weapons disposal program and three international disarmament agreements. These agreements, which will affect PUDA well into the future, are listed below.

- Chemical Stockpile Disposal Program
- Intermediate-Range Nuclear Forces Treaty
- Bilateral Chemical Weapons Treaty between the United States and the Soviet Union
- Follow-on International Chemical Weapons Convention

The Program Manager Chemical Demilitarization (PMCD) estimates an additional 118 personnel will be required to support the CHEM DEMIL mission in 1997 and 1998. The Commander, TEAD, estimates that number to be 170 in 1997 and 193 in 1998. Starting in FY 91, varying numbers of personnel will be required to support reconfiguration and security during plant construction. This number could eventually reach the 193 maximum. Plans for funding, hiring, training, and certifying these personnel have yet to be fully developed by PMCD.

Quota inspections performed by the Soviet Union under terms of the INF Treaty now require approximately 150 personnel to provide transportation, open mothballed buildings, provide access to all areas during the inspection, open large containers, and serve as security guards/site escorts. Until May 2001, it is estimated that one quota inspection lasting up to 36 hours may occur each year at PUDA.

The Bilateral Chemical Weapons Treaty has already been signed with the Soviet Union and will be sent to the Senate for ratification after inspection protocols are completed. This agreement will dovetail with the International Chemical Weapons Convention that will allow intrusive inspections and permanent monitoring programs for chemical weapons storage until the destruction of these items commences. The extent of personnel and funding requirements is not yet developed.

2.7 1 2 Base Operations

Within the area of base operations, the installation Commander has the following oversight responsibilities. Assignment of these functions originates in either Federal or State law or DOD/DA regulations.

- Surety
- Security (to include chemical accident/incident response)
- Safety
- Environmental management
- Surveillance
- Public affairs
- Accountability

2 7.1 3 Facilities Requirements

In addition to providing the required oversight, the Commander must assure that the industrial base at the installation will be sufficient to meet the requirements of the chemical disposal plant's daily throughput rates and life cycle schedule. Major upgrades or expansions to the facilities shown below are needed. Also, a new laundry will be constructed to support the overall chemical mission at PUDA.

- Changehouse
- Chemical laundry
- Ammunition reconfiguration building renovation
- Ammunition reconfiguration building addition
- Storage area road upgrade
- Miscellaneous (parking, utilities, water, refuel)
- Laboratory upgrade to two test capabilities (hood, filter, and so forth)

2.7 1 4 Employment

The largest employer in Pueblo County is the C.F I. Steel Company, which employed approximately 1,500 workers in 1990. This company has filed for reorganization under chapter 11 of the Federal Bankruptcy Statutes (telephone communication, Pueblo Chamber of Commerce, January 1991). The cumulative effect of a major layoff or the actual closure of C.F I. during the realignment of PUDA could result in significant adverse effects on area employment. The management of C.F I. is optimistic that the company will have a successful reorganization and continue to operate (telephone communication, Pueblo Chamber of Commerce, January 1991). For this reason, potential layoffs at C F I. are not considered reasonably likely to occur and are not evaluated in a cumulative sense with the PUDA realignment.

2.7.2 Tooele Army Depot

The Environmental Assessment, Tooele Army Depot, Proposed Reduction in Civilian Positions, dated 11 July 1990, concluded that the proposed reduction of 144 full-time permanent civilian spaces (out of a total of 3,444 civilian spaces) "will have a minor beneficial impact on air pollution from the reduced levels of vehicle traffic. The emissions from industrial air sources, power plants, and the industrial wastewater

treatment system depend on production levels and will not be affected by the proposed reduction in civilian positions. The anticipated slight reduction in effluent to the installation or community sewer treatment plants is within their design capacity and will not have a significant effect. The type or quantity of hazardous materials or wastes used or produced by the installation will not be affected by the proposed reduction in civilian positions." Because the proposed addition to TEAD (11 spaces from the 62nd Explosive Ordnance Detachment and 116 spaces from PUDA for the supply mission) is less than the total reduction in force (RIF) recently assessed in the Environmental Assessment, the personnel effects of the PUDA realignment on TEAD will be insignificant and still less than the levels prior to the proposed reduction in civilian spaces.

According to the Metropolitan Airports System Plan (May 1981) for Salt Lake City, Tooele Valley Airport may eventually be expanded to accept larger propeller and jet aircraft. This expansion is unrelated to the Army proposal. This would increase noise levels, particularly at the landing and takeoff ends of the runway. No noise impact evaluation of this potential expansion has been completed at this time, however. Such evaluation would be done as a part of the NEPA compliance for that expansion.

2 7 3 Red River Army Depot

RRAD recently underwent a RIF. The RIF included the separation of 13 civilian personnel on 12 October 1990, the reassignment of 388 civilian personnel on 13 October 1990 and 16 civilian personnel on 2 December 1990, and the change to lower grade of 350 civilian personnel on 13 October 1990 and 19 civilian personnel on 2 December 1990. An Environmental Assessment and a Finding of No Significant Impact (FNSI) for the RIF action have been completed. Although no significant impacts are related to the RIF action,

the addition of 61 spaces as a result of the PUDA realignment will help to offset any minor impacts.

3 - AFFECTED ENVIRONMENT

3.0 INTRODUCTION

This section presents information on the physical, biological, cultural, and socioeconomic resources and the HTW at PUDA, TEAD, RRAD, and ANAD. This information forms a basis against which the effects of the BRAC action may be measured in the impact analysis presented in section 4.

3.1 PUEBLO DEPOT ACTIVITY

3.1.1 General

PUDA is located in southeastern Colorado about 14 miles east of Pueblo. Other nearby communities include Boone, Avondale, and North Avondale. Recorded Pueblo area history dates back to French trappers who crossed the area in 1673. Fur traders followed, as did the Fremont expedition, Kit Carson, Zebulon Pike, and other explorers, trappers, and frontiersmen. Railroads arrived in the area in 1872. Industry and government facilities have played a large part in the development of the area.

Most of the approximately 23,000 acres of semiarid land on which PUDA is located were acquired in 1941. Construction of PUDA began in 1942. The initial function of PUDA was as a storage and supply depot for ammunition. It expanded to include the storage and distribution of general supplies. Following World War II, it assumed responsibility for the rebuilding and maintenance of artillery fire control and optical materials and the reconditioning of various transport and combat vehicles.

PUDA continued to grow and at one time was a special weapons center and had responsibility for rebuilding and maintaining guided missiles, among other missions. It also became the repository for U.S. Army historical properties. During 1974, PUDA was reduced to Activity status and assigned to TEAD. Activities, personnel, and the mission scope were reduced.

The majority of the buildings at PUDA are located in the south-central portion of the installation. These buildings include facilities for administration, general services, shops, warehouses, utility services, recreation, family housing, workshops, and storage. The ammunition workshop area is in the northwest portion of the installation, and the guided missile workshop area is in the northeast portion of the installation. The remainder of the installation comprises igloo and open storage, grazing areas, a surveillance test range, and a demolition area. Overall, the more than 1,200 buildings on the installation are in good condition or require only minor repairs.

3 1 2 Current Mission

PUDA is one of four installations assigned as Activities under TEAD. The mission at PUDA is to (1) operate a supply depot activity that provides for the receipt, storage, issue, maintenance, and disposal of assigned commodities and (2) provide limited maintenance to preclude deterioration of activity facilities and to retain limited shipping and receiving capabilities for assigned commodities.

Four divisions are responsible for performing duties that support the overall mission at PUDA. The Mission Division is responsible for planning, directing, and coordinating installation activities concerned with receipt, storage, preservation, and shipment of mission stocks and installation operating supplies; maintenance, renovation, and demilitarization of conventional ammunition, explosives, and chemical

munitions, and transportation management services. The Mission Division also maintains and operates support shops for the entire installation. The Engineering and Logistics Division directs and coordinates assigned administrative and service support activities and provides centralized housing management services. The Quality Assurance Division is responsible for planning, directing, and coordinating inspection, quality assurance, quality control, and calibration programs in support of PUDA missions for the receipt, storage, maintenance, and issue of materiel, including various types of ammunition. The Security Division provides security services for the entire installation, including response teams for chemical accidents/incidents.

The tenants at PUDA include the Occupational Health Clinic (Health Services Command), ACRC, ISC, the Martin-Marietta Corporation, and the Defense Reutilization and Marketing Office (DRMO). The Occupational Health Clinic's primary responsibility is providing emergency first aid for PUDA employees. The staff is also trained to handle accident victims who have been exposed to mustard gas and other toxic chemical agents. The ACRC performs a variety of functions relating to the repair and calibration of testing and measuring equipment such as volt meters, oscilloscopes, microwave equipment, scales, and thermometers. The responsibilities of ISC include managing the communication center, providing support for computer services, directing mailroom activities, and processing data. Martin-Marietta Corporation is a private contractor that works in conjunction with the Missile Systems Branch (Mission Division). The collection, disposal, and recycling of spent and nonoperational equipment and hazardous substances and wastes is the responsibility of DRMO.

3.1 3 Physical Environment

The following descriptions of the physiography, climate, soils, and water resources at PUDA are taken from USATHAMA, Enhanced Preliminary Assessment Report. Pueblo Depot Activity, Pueblo, Colorado, March 1990, unless otherwise noted

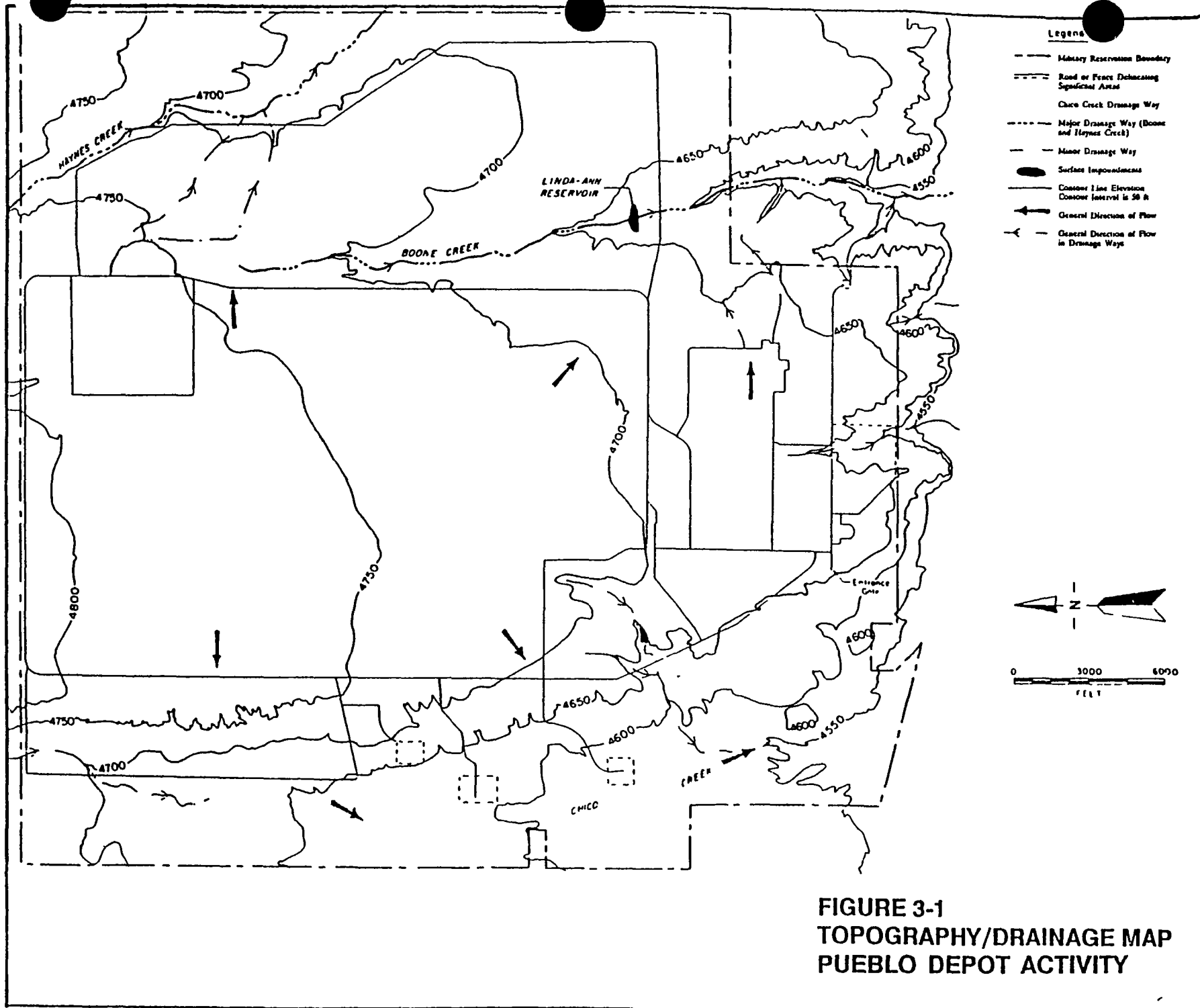
3 1 3 1 Physiography

PUDA is situated in the western part of the Colorado Piedmont section of the Great Plains physiographic province. The Colorado Piedmont is a broad, shallow basin formed approximately 28 million years ago when pre-Tertiary sediments were eroded by the Arkansas River and its tributaries. PUDA is located on an erosional remnant of an extensive alluvial terrace deposit.

The terrain at PUDA is generally flat (less than a 1-percent slope) in the central portion, with steeper slopes (15-percent average slope) toward the drainageways. Elevations range from approximately 4800 feet above mean sea level (m s l.) in the northern part of the installation to approximately 4550 feet m s l. in the southern part. A topography/drainage map is presented as figure 3-1. The southern edge of the terrace is approximately 150 feet above the Arkansas River.

3 1 3.2 Climate

The climate at PUDA and in surrounding areas is dominated by dry continental conditions. Such conditions are characterized by low humidity (average 41 percent), abundant sunshine (average 74 percent), low precipitation (average 11.11 inches per year), and a large diurnal temperature range (30 degrees Fahrenheit (°F)).



The average annual temperature is 52.8 °F, as presented in table 3-1. The average high temperature ranges from 45.5 °F in January to 91.1 °F in July. The average low temperature ranges from 14.7 °F in January to 61.6 °F in July. The maximum temperature is 105 °F and the minimum temperature is -31 °F.

Two seasonal regimes are responsible for precipitation at PUDA. Precipitation from October to April is generally in the form of uniformly distributed snow. From May to September, the majority of the area's moisture occurs during thunderstorms that provide intense, localized rainfall. Precipitation in the vicinity of PUDA averages approximately 11.1 inches per year, as presented in table 3-2. Thunderstorms occur an average of 41 times per year. July has the highest occurrence of thunderstorms and the greatest precipitation. Tornados commonly associated with intense thunderstorms have developed north of PUDA but have not touched down at the installation.

The greatest wind speeds at PUDA are from the west and north and are most common in the late winter and early spring. Wind speeds average approximately 11 miles per hour (MPH) in the spring and 7 MPH in the fall and early winter. Prevailing up-valley winds from the east/southeast generally occur during the day, and down-valley winds from the west occur at night. Winds have reached maximum speeds of 81 MPH. Roofs of several buildings and loading docks were destroyed by high winds in March 1977. Occasionally during the winter, high-intensity chinook winds occur and cause sudden temperature rises of as much as 25 to 35 °F within a few hours.

Table 3-1
Temperature Ranges in the PUDA Area
(°F)

<u>Month</u>	<u>Maximum Temperature</u>	<u>Average High Temperature</u>	<u>Average Temperature</u>	<u>Average Low Temperature</u>	<u>Extreme Temperature</u>
January	78	45.5	30.1	14 7	-29
February	79	49.8	34 7	19 6	-31
March	86	54.9	40.0	25 0	-20
April	88	66.4	51.7	36.9	2
May	98	75 5	61 1	46.6	25
June	105	85.8	70 7	55 6	38
July	105	91 1	76 4	61 6	44
August	104	88 8	74 5	60 1	40
September	99	81 5	66 2	58 8	29
October	92	70 7	54 5	38 2	14
November	83	56 5	40 8	25 1	-14
December	77	48 2	33 0	17 7	-23
Annual	91.1	67.9	52 8	38 3	6 2

Source City and County of Pueblo, Colorado, The Pueblo Regional Planning Commission, "Pueblo Regional Comprehensive Development Plan," March, 1980

Table 3-2
Precipitation in the PUDA Area
(inches)

<u>Month</u>	<u>Precipitation</u>	<u>Snowfall</u>
January	0 28	5.9
February	0.34	4 7
March	0 61	7.1
April	0 94	2.9
May	1 52	0.0
June	1.23	0 0
July	1.85	0 0
August	1 81	0 0
September	0 89	0 8
October	0.98	1 1
November	0.44	2.9
December	0 22	4 1
Annual	11 11	29.6

Source: City and County of Pueblo, Colorado, The Pueblo Regional Planning Commission, "Pueblo Regional Comprehensive Development Plan," March 1980

3.1 3.3 Soils

Six major soil associations occur on the installation. Stoneham-Adena-Manzanola, Arvada-Keyner, Olney-Vona, Valent, Limon-Razor-Midway, and Las Animas-Glenburg-Apishapa

The Stoneham-Adena-Manzanola association occurs over the eastern and central portions of PUDA. The soils are deep, well-drained loams, clay loams, and silty clay loams that have formed in loamy clayey alluvium.

The Arvada-Keyner association occurs mainly in the northeast portion of PUDA.

The Olney-Vona association occurs in the northern and southeastern portions of PUDA. These soils are deep, well-drained sandy loams and loamy sands that formed from eolian materials.

The Valent association soils occur in the northern and southeastern portions of PUDA. These soils are deep, excessively drained loamy sands and sands that have formed in eolian sand deposits.

The Limon-Razor-Midway association is found along the western, southern, and eastern margins of PUDA. These soils are shallow to deep, well-drained silty clay, silty clay loams, clay loams, and clays that formed from weathered shale.

The Las Animas-Glenburg-Apishapa association is found mainly along Chico Creek. These soils are deep, somewhat poorly drained fine sandy loams and silty clays that have formed in the alluvium.

3.1 3.4 Water Resources

3.1.3.4.1 Surface Water

The surface water drainage on PUDA is controlled by the Chico Creek, Boone Creek, and Haynes Creek drainages. Drainage from the western portion of PUDA is collected by Chico Creek, which traverses the installation on the western side, as shown in figure 3-1. Drainage from the central portion of PUDA is collected by Boone Creek, which originates near Igloo Block G and leaves the installation east of the sewage treatment plant. Drainage from the northeastern part of PUDA is received by Haynes Creek, which crosses the northeast corner of the installation. An unnamed drainageway crosses the landfill from north to south and exits the south-central portion of PUDA. Shallow, east-west trending drainageways have been constructed between each row of igloos, these drainageways drain to Chico, Boone, and Haynes Creeks. The majority of surface runoff enters Chico Creek only after substantial precipitation. Surface water from the three creeks enters the Arkansas River about 3 to 4 miles south of PUDA.

The three main surface water drainages that cross PUDA (Chico, Boone, and Haynes Creeks) tend to flow only after periods of rainfall and snowmelt. Although the water table is depressed in the vicinities of Boone and Haynes Creeks, indicating ground water discharge in these areas, most of this ground water discharge is lost to evapotranspiration. Other water available for surface runoff is low because of the low average precipitation (11.11 inches per year) and high evaporation rates. Infiltration rates in this area may also be high. Boone Creek is partially supplied by a spring in its northern portion and by effluent from the sewage treatment plant in its southern portion.

Two manmade surface water bodies exist within PUDA. Both are located on bedrock and are recharged by surface water. The Linda-Ann Reservoir, 17 acres in size, is located in the southeastern portion of the installation. This reservoir is supplied by Boone Creek and nearby springs that occur at the contact between the water table aquifer and the underlying bedrock. The other surface water body is a small pond located in the southwestern part of PUDA near the Ammunition Workshop Area. This pond is supplied by waters of a Chico Creek tributary drainage. The two manmade water bodies are not associated with PUDA's potable water system.

Springs occur along the western, southern, and eastern edges of the terrace as a result of aquifer discharge at the alluvium-bedrock contact. Several of these springs have been developed for livestock and domestic use.

The Arkansas River flows to the south of PUDA. Surface water flowing across PUDA ultimately enters this river.

According to the National Wetlands Inventory mapping done by the U.S. Fish and Wildlife Service (USFWS) (based on July 1977 aerial photography), there are a number of small, isolated, palustrine (marshy) wetlands on PUDA. These small wetlands are located at 13 different locations scattered across the installation. The largest of these is on Boone Creek and is associated with Linda-Ann Reservoir.

3.1 3 4.2 Ground Water

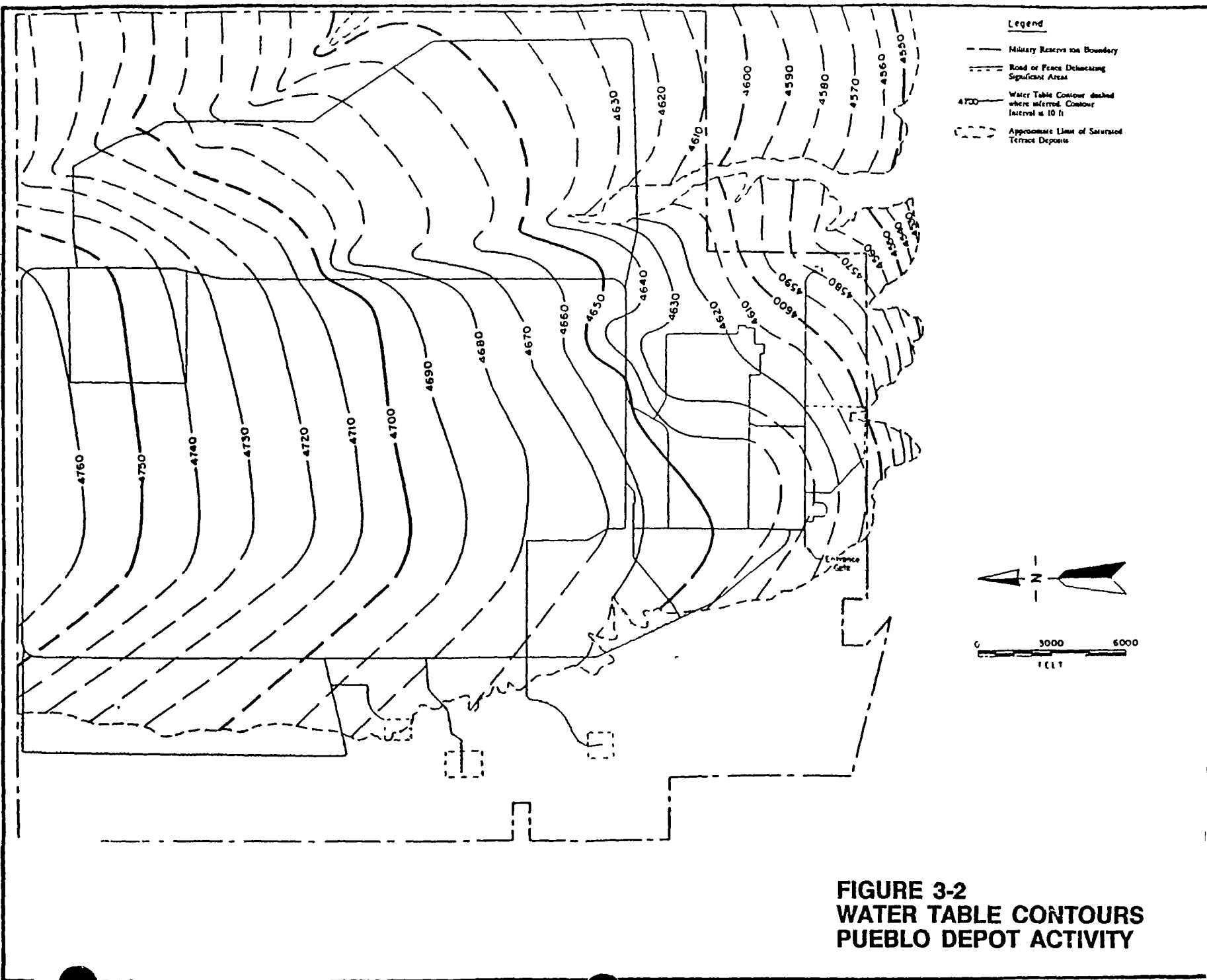
Four hydrogeologic units are identified in existing reports as being significant to PUDA. Two of these units are the alluvial terrace aquifer and the Arkansas River alluvial aquifer, both of which overlie the bedrock in the area. The alluvial terrace aquifer is present under much of PUDA, and the Arkansas River alluvial aquifer occurs to the south. These two

alluvial aquifers are separated by outcrops of bedrock and are not hydraulically connected. Both of the alluvial aquifers overlie the confining layers of the Pierre Shale and other low-permeability strata of the Upper Cretaceous, which together are over 2,000 feet thick. Below these confining layers is the Dakota aquifer.

The terrace alluvium underlies much of PUDA, but it is absent on the western and southern edges because of erosion. Beneath the site, the terrace alluvium is as much as 77 feet thick in troughs eroded in the bedrock prior to deposition of the alluvium. A broad bedrock trough trends southward from near the center of the north PUDA boundary to another bedrock trough that trends generally westward.

Figure 3-2 shows the areal extent and potentiometric surface of the alluvial terrace aquifer at PUDA. This figure indicates that regional ground water flow in the alluvial terrace aquifer is to the south and southeast. There is a regional hydraulic gradient of 0.0047 in a southward direction. Throughout most of the installation, the alluvial terrace aquifer is unconfined; however, in the southwestern portion, the aquifer is confined by fine-grained strata.

The potentiometric surface is depressed around water supply wells in the south-central portion of PUDA. These wells were installed in thicker parts of the aquifer in bedrock troughs. The water supply wells are shown in figure 3-3. Numerous test holes and observation wells have also been drilled to assist in characterizing the aquifer; these are also shown in figure 3-3. Some supply wells were not yet present during November 1967, when the illustrated potentiometric surface data were collected. Therefore, present conditions may be different from those depicted. The potentiometric surface is also depressed where creeks cross the aquifer, showing that ground water discharge occurs there. This discharge is lost to evapotranspiration.



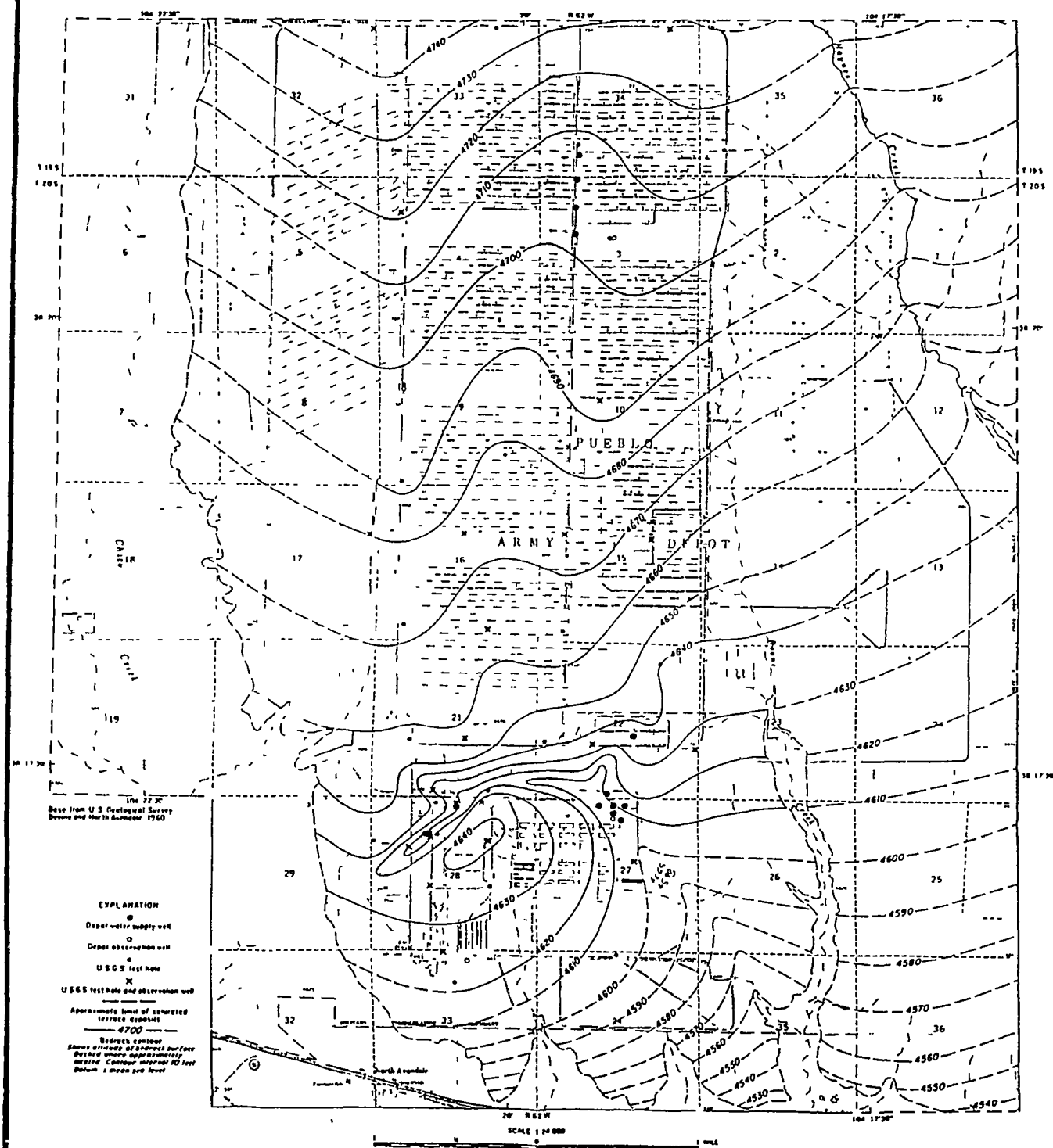


FIGURE 3-3
WELL LOCATION MAP
PUEBLO DEPOT ACTIVITY

Recharge to the aquifer is from the north as underflow into the alluvial terrace aquifer within the boundaries of PUDA. Recharge due to onsite precipitation and infiltration is considered negligible because of the small amounts of annual precipitation and the high evapotranspiration potential. Recharge due to underflow was estimated to be 900 acre-feet per year. Discharge occurs as seeps and contact springs near the edges of the aquifer where streams have eroded the alluvial terrace deposits and the water table has been intersected. Additional discharge from the alluvial terrace aquifer occurs because of the pumping of water supply wells, the predominant source of water for PUDA. The amount of this discharge was estimated to be 368 acre-feet per year in 1968.

Aquifer tests were conducted on two water supply wells, and data from these tests were reported. From these data, hydraulic and storage properties for the alluvial terrace aquifers were estimated. Conductivities range from 47 to 80 feet per day, and the intrinsic permeability was estimated at between 19 and 33 square micrometers (μm^2). Where the aquifer is unconfined, the specific yield is approximately 15 to 20 percent, which is typical of fine- to medium-grained alluvium. Confined portions have a storativity of 0.00016 to 0.00033.

Hydraulic conductivity estimates for the Pierre Shale range from 10^{-8} to 10^{-11} feet per second. Thus, the Pierre Shale acts as a confining bedrock layer to lower permeability strata below and isolates water in the overlying alluvial terrace aquifer from deeper strata.

The ground water of the alluvial terrace aquifer can be characterized as being predominantly a mixed anion type water. Water quality has progressively deteriorated as a result of historical excessive pumping. Hardness has roughly doubled, and dissolved solids have increased roughly 30 percent.

The alluvium along the Arkansas River is a significant aquifer and supplies many large-capacity irrigation wells downgradient of PUDA. Although this river alluvial aquifer is not hydraulically in contact with the alluvial terrace aquifer, it may receive surface water flow originating as alluvial terrace ground water discharge.

The Dakota Sandstone is the first significant aquifer below the terrace deposits at PUDA. It is separated from the alluvial terrace deposits by the Pierre Shale and a sequence of low-permeability shale and limestone deposits ranging from 2,000 to 2,500 feet in thickness. The Dakota Sandstone has been extensively developed west of Pueblo. This development has shown that water production rates for wells in this aquifer should not be expected to exceed 50 gallons per minute and that the water quality should be expected to be poor in quality, having high concentrations of dissolved solids and radioactive particles. In addition, a well into this aquifer would be expensive to construct and operate because of excessive depths.

3.1.3.5 Noise

The following is a summary of the noise environment at PUDA and the surrounding area, as described in the Installation Environmental Assessment, Tooele Army Depot, Pueblo Depot Activity, 1982. Because PUDA is surrounded on three sides by undeveloped grazing land, there are few significant noise generators or noise receptors within the immediate vicinity of its boundaries. The only nearby communities are located to the south. The area to the south is also the location of a major transportation corridor (railroads and highway), which acts as a noise generator. The flight path of the Pueblo Memorial Airport passes over PUDA and is another noise source in the local area.

The noise environment of the undeveloped areas (west, north, and east) is quiet, with average noise levels less than 40 decibels on the A scale (dBA). The few scattered ranches located in these areas do not constitute a noise source, and there are no significant human populations that would be affected by noise. Noise influences in these areas include the DOT Transportation Test Center (TTC) and the aircraft overflight related to the Pueblo Memorial Airport. Composite Noise Rating (CNR) contours have been developed for the area between the airport and PUDA. No significant noise conflicts have been identified as a result of the operation of the TTC (again because of the sparse population).

The small communities of Boone, North Avondale, and Avondale, located south of PUDA, do not generate significant noise levels. These communities are rural and residential in character. North Avondale contains only a few houses, and Boone has a population of less than 500. Both North Avondale and Boone are located along the Sante Fe and Missouri Pacific Railroad lines, which constitute their major noise source. In addition, both communities lie 100 to 200 feet in elevation below the activity areas of PUDA.

Rail traffic on the Sante Fe and Missouri Pacific Railroad lines is also the primary noise source along the southern boundary of PUDA. Although the number of trains (both freight and coal) that travel these lines varies from day to day, up to 20 trains may pass through during a 24-hour period. In addition, these train trips occur both day and night. The typical noise level generated by diesel locomotives ranges from 88 to 98 dBA (measured at 50 feet from the source); freight cars generate noise ranging from 80 to 94 dBA.

Highway noise is much less of a factor in the local noise environment than rail traffic noise. Although U S Highway 50 passes nearly adjacent to the southwest corner of PUDA, the noise level associated with the

vehicular traffic has no significant impact. Business Route 50 passes through Avondale and is probably the community's most significant noise source. Automobiles at a speed of 50 to 70 MPH generate noise levels ranging from 84 to 88 dBA (measured at 50 feet from the source). Medium and heavy trucks within the same speed range generate a noise level also ranging from 84 to 88 dBA. At speeds less than 35 MPH, automobiles typically generate a noise level of less than 72 dBA and trucks generate a noise level of less than 82 dBA.

The primary runway used at the Pueblo Memorial Airport has its landing and takeoff path in an east-west direction. As a consequence, PUDA experiences occasional overflight by large jet aircraft. Training flights, which make up the majority of the flight operations at the airport, are primarily flown in a "race track" pattern that avoids overflight of PUDA. CNR contours have been developed by the airport and provide a ground pattern of noise impact areas. PUDA is outside of the area contained within these contours. Therefore, it is outside of an aircraft noise area that would generate complaints from persons on the ground or create an adverse noise situation.

The State of Colorado has developed noise guidelines under Article 12 (25-12-101) of the 1973 Colorado Revised Statutes. Although Pueblo County has not adopted a local noise ordinance, the State statute is enforced. Enforcement of the statute is triggered by a complaint to the Pueblo Health Department. Readings of the offending noise source are taken, and, if the maximum permissible noise levels are exceeded, a notice is given to the offender. The maximum allowable noise levels (for 7 a.m. to 7 p.m.) are as follows: residential zone, 55 dBA, commercial zone, 60 dBA; light industrial zone, 70 dBA, and industrial zone, 80 dBA. These levels are reduced by 5 dBA between 7 p.m. and 7 a.m. Also, these noise levels may be exceeded by 10 dBA for 15 minutes within a 1-hour period.

The noise levels are measured at a distance of 25 feet from the property line of the source

DA has studied the noise environment around its installations to determine whether undesirable high noise levels are intruding into developable land. This DA program, known as the Installation Compatible Use Zone (ICUZ) program, is intended to prevent future land use conflicts by working with communities to limit encroachment.

The ICUZ program distinguishes between three noise zones. Zone I (normally acceptable), Zone II (normally unacceptable), and Zone III (unacceptable). For blast noise, the dividing line between Zone I and Zone II is a day-night level (DNL) of 62 dBA. Areas exposed to an average blast noise level below 62 dBA are considered to be acceptable for homes, schools, churches, and other noise-sensitive uses. In areas where the DNL exceeds 62 dBA, DA policy is to work with communities and local governments to restrict noise-sensitive land uses. This program is also applicable to the other installations addressed in this EIS.

3.1 3.6 Air Quality

Pueblo County, within which PUDA is located, is in compliance with the National Ambient Air Quality Standards for criteria pollutants (e.g., sulfur dioxide, total suspended particulates (TSP), and carbon monoxide). The State of Colorado's air quality monitors are primarily located within the city of Pueblo. In 1987, Pueblo County was monitored for TSP, lead, and PM10 (TSP standard which considers particles of less than 10 micrometers). The results of the monitoring are presented in table 3-3.

The State has previously monitored Pueblo County for carbon monoxide and sulfur dioxide. Monitoring was discontinued because these pollutants

Table 3-3
Summary of 1987 Air Quality in the
South-Central Colorado Region

<u>Pollutant</u>	<u>Counties Monitored</u>	<u>Averaging Times</u>	<u>Standards</u>	<u>Counties with Violations</u>	<u>Value to Compare to Standard</u>	
					<u>Location</u>	<u>Value</u>
TSP	Pueblo	Annual	75 $\mu\text{g}/\text{m}^3$ ^{1/}	None	Pueblo	56 $\mu\text{g}/\text{m}^3$
Lead	Pueblo	Quarterly	1.5 $\mu\text{g}/\text{m}^3$	None	Pueblo	0 0 $\mu\text{g}/\text{m}^3$
PM10	Pueblo	24 hours	150 $\mu\text{g}/\text{m}^3$	None	Pueblo	34 $\mu\text{g}/\text{m}^3$
		Annual	50 $\mu\text{g}/\text{m}^3$	None	Pueblo	56 $\mu\text{g}/\text{m}^3$

^{1/} $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Source: Colorado Air Quality Report to the Public, Colorado Air Quality Control Commission, October 1988

were shown to be present only at very low levels and well within the minimum requirements of the air quality standards (telephone communication with staff, Colorado Department of Health, August 1990).

Air pollutants at PUDA include vehicle emissions, heating plant emissions, and emissions from demilitarization activities. Emission products resulting from open detonation of commonly used explosives in ammunition are shown in table 3-4

PUDA has an emission permit from the Colorado Department of Health (CDOH) that allows for the annual discharge of 250 tons of TSP from the firing of Pershing missile motors. It also has a permit for the underground disposal of excess obsolete or defective explosives by detonation. The permit allows the detonation of 4,000 to 5,000 pounds per blast; however, noise concerns effectively limit the operation to 2,500 to 3,500 pounds, depending on atmospheric conditions (verbal communication, environmental engineer, PUDA, October 1990). An Ammunition

Table 3-4
Emissions and Contaminants Generated
by Open Burning/Open Detonation
for
Common Propellants and Explosives

Process/Material (Pounds of Emission/Tons of Explosive Destroyed)			
<u>Emission or Contaminant</u>	<u>Open Burning Propellant</u>	<u>Open Detonation TNT</u> ^{1/}	<u>Open Detonation Comp B</u>
Carbon dioxide	2,174 3	1,948.4	1,810.4
Nitrogen ^{2/}	3,928 9	4,173.9	4,313.3
Carbon monoxide	426 6	589 3	195.9
Water ^{2/}	535.5	319 4	455.5
Carbon solids	0 0	0 0	0.0
Hydrogen	16 5	28.9	13.5
Methane	0.0	7.6	0 008
Ammonia	0 006	0 081	0.014
Liquid lead compounds	0 0	0.044	0.0
Potassium hydroxide	0 02	0 030	0.032
Elemental lead	0 0	0 067	0.067
Hydrogen sulfide	0 0	0 002	0.002
Gaseous lead oxide	0 0	0 0	0.028
Sulfur dioxide	0 004	0 0	0.004
Nitrogen monoxide	0 0	0 0	0.030
Solid lead oxides	0 0	0 0	0.042
Oxygen	0.0	0.0	135.8
Potassium hydroxide solids	0 0	0 0	0.0
Hydrogen cyanide	0 0	0 0	0.0

^{1/} TNT is trinitrotoluene

^{2/} Cannot be considered a contaminant, presented for material balance only

Sources USATHAMA, 1990. Characterization and Quantification of Emissions Resulting from Projected Open Burning and Open Detonation Operations, Navajo Army Depot, Bellemont, Arizona.

Peculiar Equipment 1236 (APE-1236) furnace, commonly known as a popping furnace, is also operated at PUDA for demilitarization activities.

The DOT categorizes explosives for transportation and safety purposes. There are three major classifications: class A explosives, which are roughly defined as a mass detonation explosive (one in which the entire shipment could explode simultaneously); class B explosives, which are defined as those explosives which generally function by rapid combustion rather than detonation (these include rocket propellants, smokeless powder, and cannon projectiles); and class C explosives, which are defined as certain types of manufactured articles that contain class A or class B explosives as components, but in restricted quantities. Class C explosives include small arms ammunition (49 CFR 173.53, 173.88, and 173.100). Only class C explosives are processed at PUDA, therefore, an air quality emission permit is not required (verbal communication, environmental engineer, PUDA, October 1990). However, before ammunition can be demilitarized as a class C explosive, it must first be tested to ensure that it does not contain hazardous constituents.

Four of PUDA's 31 boilers are permitted. The other 27 fall under the grandfather clause (constructed or installed before 1977) of the air quality regulation. The permitted boilers are all oil fired. The other 27 boilers use either oil, coal, or kerosene (permit list for PUDA, October 1990). Estimated air emissions for installation boilers for 1988 are presented in table 3-5.

Table 3-5
Stack and Pollutant Emissions at PUDA - 1988

<u>Pollutant</u>	<u>Tons/Year</u>
Particulates	4.2
Sulfur dioxide	84.0
Nitrogen oxide	37.8
Volatile organic compounds	0.6
Carbon monoxide	<u>14.9</u>
Total	141.5

Source: Compliance Determination Work Sheet and EIS Update for 1988, PUDA, 1990.

Air quality monitoring is conducted at PUDA in compliance with emission permit requirements. Fourteen PM10 monitoring stations are operated at PUDA. Six of these are used to measure TSP and aluminum levels to ensure compliance with an emission permit allowing the firing of Pershing missile motors. Tests have also been conducted on hydrogen chloride as part of the permit requirements (Annual Report PM10 and Aluminum Ambient Air Monitoring Program, Pueblo Army Depot, Pueblo, Colorado, 1 December 1988 - 30 November 1989, August 1990). The PUDA area is currently in compliance with air emission permit requirements.

3 1.4 Biological Resources

3 1 4 1 Flora

The principal native vegetation community type on PUDA is shortgrass prairie. Grass species include blue grama, western wheatgrass, buffalo grass, sand dropseed, galleta, and alkali sacaton. Shrubs and half shrubs include broom snakeweed, rubber rabbitbrush, sand sage, small soapweed, and walkingstick cholla. Forb species include coppermallow, sunflower, and Russian thistle. Species of minor communities occur and vary in abundance with the amount of rainfall. Aquatic vegetation associated with Linda-Ann Reservoir includes cattail, bulrush, sedge, and duckweed. Riparian vegetation at the southeastern and southwestern edges of the reservoir includes cottonwood and willow. Cottonwood is also associated with the pond in the Ammunition Workshop Area. Two species of plants likely to be found in the area are the roundleaf four-o'clock (*Oxybathus raturndifolius*) and the Arkansas feverfew (*Parthenium tetrameurisis*). They are listed as Federal candidate category II and as Colorado State list I.

3.1.4.2 Fauna

Both mule and white-tailed deer occur on PUDA but infrequently and in small numbers because of the absence of preferred habitat and browse species. Pronghorn antelope are common. Forbs, the preferred food item for these species, are somewhat limited, as is free water during the summer. Six water catchments were constructed in the early 1980's and repaired in 1987, in part to alleviate the problem of water scarcity.

Coyotes are the most common furbearer on PUDA, other furbearers found on PUDA are badgers, skunks, raccoons, squirrels, and foxes. Raptors known to use PUDA include the bald and golden eagle, red-tailed hawk, Swainson's hawk, ferruginous hawk, peregrine falcon, northern harrier, great horned owl, burrowing owl, small eared owl, barn owl, and many others. Prey species, mainly small mammals (kangaroo rats, pocket gophers, and mice) and small birds (horned lark and meadowlark), are abundant on PUDA.

Upland game birds, such as the scaled quail, and small game mammals, including cottontails, jackrabbits, and prairie dogs, are common on PUDA but are limited by the lack of suitable habitat or cover. Water guzzlers were installed in 1987 as part of PUDA's Natural Resources Plan to improve habitat for upland game birds.

Dabbling ducks use PUDA primarily during migration, with much nesting, brood rearing, and winter use. Geese frequent Linda-Ann Reservoir during migration and the water treatment ponds to the south in winter. Emergent vegetation necessary for waterfowl food and cover, such as bulrush, cattail, sedge, and duckweed, can be found at Linda-Ann Reservoir. However, stands are limited. Submerged vegetation used by waterfowl is lacking because of natural turbidity. Nesting structures are erected to provide nesting cover for waterfowl.

In 1986, rough fish (bullheads and green sunfish) were eliminated from Linda-Ann Reservoir and the pond in the Ammunition Workshop Area via rotenone control. The southern redbelly dace was introduced into the pond in the Ammunition Workshop Area, which is located within a security area, thereby providing the threatened specie a refuge. Rainbow trout, Snake River cutthroat trout, brook trout, and channel catfish have been introduced into Linda-Ann Reservoir. Snake River cutthroat are stocked annually, and channel catfish are stocked biannually

Other species potentially inhabiting PUDA on a seasonal or permanent basis would be those that are characteristic of the habitats present (USFWS, 1987).

The USFWS (1987) listed three endangered wildlife species that could possibly occur on or in the vicinity of PUDA. the black-footed ferret (*Mustela nigripes*), the peregrine falcon (*Falco peregrinus*), and the bald eagle (*Haliaeetus leucocephalus*) Two letters from the USFWS are included as appendix C of this EIS. No Federal or State-listed threatened or endangered fish species were found on PUDA at the time of the Fish and Wildlife Management Plan (USFWS, 1987) However, one State-listed threatened species, the southern redbelly dace, has since been introduced into the Ammunition Workshop Area pond. Another State-listed threatened species, the Arkansas darter, is scheduled for possible introduction into Linda-Ann Reservoir and the unnamed pond north of Linda-Ann Reservoir (USFWS, 1990) The USFWS also listed candidate species (species not yet protected under the Endangered Species Act but considered as potential future additions to the list) that may occur on PUDA (appendix C).

The 1987 Fish and Wildlife Management Plan was prepared by the Fish and Wildlife Assistance Office for PUDA in accordance with a 7 April 1978 Memorandum of Understanding between the Department of the Interior and the DOD. While oriented toward sensitive species and game species, the plan

also benefits nongame species that use similar habitats and share similar requirements for cover and food. Presently, no sport shooting or trapping is allowed on PUDA. However, public fishing is allowed. Grazing also occurs on PUDA.

3.1.5 Cultural Resources

Cultural resources at PUDA potentially could date to any time within the approximately 12,000 years of known human occupation in this region. In general terms, this time period has been divided into a series of cultural/chronological periods from Paleo-Indian (10,000 B.C. to 6000 B.C.) to Historic (A.D. 1750 to present).

The original ingress of Europeans into the region began with the exploration trips of the French in the late 1600's and early 1700's. Permanent European settlement developed from the fur trade activities of the 1820's and 1830's and the establishment of trading posts along the Arkansas River. The influx of gold seekers in the 1850's was followed by the establishment of the Colorado Territory in 1861. After the Civil War, Euro-American immigration increased. An initial economic concentration on open-range cattle ranching was followed by the development of dry (natural moisture) and irrigation farming. Ranching was the principal land use in the immediate PUDA area when the Government began acquiring this property in 1941.

Although PUDA has not been surveyed intensively for cultural resources, an Archeological Overview and a Historic Properties Report were completed in 1984. The Archeological Overview identified 13,993 acres at PUDA as having the potential to contain significant archeological resources and requiring survey, while the remaining 8,661 acres were judged to have little or no potential because of previous ground disturbances. In addition, 10 potential prehistoric site locations were

identified through informant interviews, but they have not yet been recorded

The Historic Properties Report evaluated the 1,275 then-existing structures at PUDA, all of which date from the World War II era or later. The report included Historic American Building Survey/Historic American Engineering Record (HABS/HAER) documentation of 27 prototypical examples and resulted in the assessment that none of the structures at PUDA were eligible for inclusion on the National Register of Historic Places (NRHP). However, a reevaluation may be in order for the 1,016 structures built during the 1940-45 period. In a September 1990 meeting, the Colorado State Historic Preservation Officer's (SHPO's) staff stated that the installation may be eligible for inclusion on the NRHP for historical rather than architectural reasons because of its association with World War II.

3.1 6 Socioeconomic Resources

3.1 6 1 Population

The region of influence that may be expected to experience socioeconomic effects induced by the realignment actions at PUDA is Pueblo County. This county encompasses 2,377 square miles.

The regional population, according to the 1980 census, was 125,972. The estimated 1989 regional population was 125,883, a decrease of approximately 0.07 percent. The projected 1994 regional population is 123,392, a decrease of about 0.02 percent from the estimated 1989 population.

3 1.6 2 Employment

The 1988 civilian labor force in Pueblo County was 49,902 (Bureau of Economic Analysis (BEA), 1988) In 1986, the major portion of employed labor was in three sectors. services (27.5 percent), retail trade (20 percent), and government (21 percent). An estimated 14 percent of the total civilian labor force in the region is employed at PUDA.

The 1989 unemployment rates in Pueblo County, the State of Colorado, and the United States are presented in table 3-6 In Pueblo County and the State, unemployment declined through the first part of 1990 The county reported 6.7 percent unemployment and the State 4.9 percent through November of 1990 The seasonally adjusted rate for the month of November was 6.5 and 4.4 percent for the county and State, respectively (Monthly Labor Force Review, Colorado Department of Labor and Employment, January 1991).

Table 3-6
1989 Unemployment Rates

<u>Locality</u>	<u>Percent Unemployed</u>
Pueblo County	8.2
State of Colorado	5.8
United States	5.3

Source. Construction Engineering Research Laboratory, January 1991,
Economic Impact Forecast System II

3.1.6.3 Income

In Pueblo County, personal income in 1988 was \$1.6 billion, an increase from \$1.09 billion in 1980 Estimated per capita income for 1989 was \$9,692 This compares to the 1989 estimated per capita income of

\$14,217 for the State of Colorado and \$13,218 for the United States. The 1994 Pueblo County per capita income is projected to be \$11,003. The 1994 projected per capita income for the State and the Nation is \$17,689 and \$16,669, respectively. Average household income in 1989 for Pueblo County, the State, and the Nation was estimated at \$26,371, \$36,824, and \$35,205, respectively (BEA, 1988). Total regional sales in 1982 (the most recent year available) was \$903.8 million (Bureau of the Census, 1982). Total government revenue in 1982 was \$176.5 million, and expenditures were \$167.0 million.

Average salaries for civilian personnel at PUDA are \$29,100, and average military salaries are \$29,300.

Much of PUDA's undeveloped area is suitable for ranching and livestock grazing. In 1989, 8,000 acres of the installation were rented by private parties at a cost of \$25,000. These funds were paid to PUDA's Natural Resources Development account.

3.1.6.4 Housing

According to the 1980 census, there were 48,614 year-round housing units in Pueblo County. Of these, 67 percent were owner occupied and 26 percent were occupied by renters. The vacancy rate was 7 percent. The median value of an owner-occupied home was \$40,700. The 1980 census reported 45,095 households in Pueblo County. The 1989 estimate was 46,020 households. The number of households is projected to decrease by 1 percent to 45,403 households by 1994.

The average monthly rent paid by military personnel for offpost housing is \$535 for officers and \$505 for enlisted personnel.

3.1 6.5 Schools

Dependents of PUDA personnel attend school districts in Pueblo County. Pueblo School District No. 60 consists of 23 elementary, 6 middle, and 4 high schools and provides education to 370 dependents of PUDA personnel. Pueblo County School District No. 70 consists of 7 elementary, 5 middle, and 2 high schools and provides education to 128 dependents of PUDA personnel. The 1988-89 school year enrollment for the two school districts was 18,542 and 4,192, respectively.

3.1 6.6 Transportation

- **Highways.** PUDA is linked to the city of Pueblo via U.S. Highway 50, which runs east and west south of the installation. This highway, where it intersects Interstate Highway 25, provides four-lane access to Pueblo. Pueblo Memorial Airport is also accessed via U.S. Highway 50. The State of Colorado records annual average daily travel (ADT) for U.S. Highway 50. In 1988, the ADT was recorded as 5,800 just east of PUDA, and a count of 4,800 was recorded at the junction of U.S. Highway 50 and State 231. This junction is located several miles west of PUDA. These traffic levels are well within State and Federal minimum service standards (telephone communication, highway engineer, Colorado Department of Highways, August 1990). The Pueblo area and PUDA are served by numerous local and area trucking firms. No public transit is provided to PUDA.

- **Rail.** Rail access to PUDA is provided along the installation's southwestern boundary, east of the highway entrance. PUDA is served by the Santa Fe and Missouri Pacific Railroads.

- **Air Access.** PUDA has a helipad; however, it is used only occasionally. Commercial passenger and cargo air transport services are available at Pueblo Memorial Airport. The closest major airport is

Stapleton International Airport in Denver, Colorado, approximately 110 miles north of PUDA

- **Transport of Ammunition** PUDA receives, stores, and issues ammunition. Movements are variable and contingent on changes in the various Army missions supported by PUDA. Table 3-7 presents the movement of ammunition to and from PUDA during a recent 5-year period.

Table 3-7
Historic Movement of Ammunition to and from PUDA
FY 85 - FY 89
(figures in thousands of short tons)

<u>Fiscal Year</u>	<u>Receipts</u>	<u>Issues</u>	<u>Total Movements</u>
85	20	42	62
86	11	18	29
87	44	28	72
88	27	33	60
89	39	38	77

Source Standard Depot System, Program Status Report by September of the appropriate fiscal year, PUDA

3.1.6 7 Utilities

3.1 6 7 1 Pueblo Depot Activity

- **Water Supply** PUDA operates and maintains its own water supply and distribution system. It relies on ground water for its water supply. Water is supplied by 13 wells (telephone communication, environmental engineer, PUDA, August 1990)

Peak ground water withdrawal increased from nearly 4 million gallons per month in 1943 to 13 million gallons per month in 1966. In 1990, peak

monthly withdrawal was slightly over 15 million gallons (telephone communication, environmental engineer, PUDA, July 1991)

Ground water withdrawal is regulated by the State of Colorado. PUDA's existing water permit allows withdrawals of approximately 897,000 gallons per day.

A potential water problem for domestic uses is the selenium level present in some ground water sources in the area. The water from supply wells is mixed in the distribution system to keep the selenium level within State water quality standards.

- **Sewage Treatment.** PUDA operates and maintains its sewage treatment plant to treat and dispose of domestic wastewater from the administrative and warehouse areas. Domestic waste in remote areas of the installation is handled through the use of septic tanks.

PUDA's treatment plant utilizes an Imhoff tank and has a capacity of 167,000 gallons per day. Treated effluent is discharged into an unnamed Boone Creek tributary in compliance with a National Pollution Discharge Elimination System (NPDES) permit. The amount of sewage treated has decreased over time because of reduced activity at PUDA. Between 1976 and 1980, the amount of domestic waste treated decreased from approximately 151,000 gallons per workday to 63,000 gallons per workday (Installation Environmental Assessment, PUDA, revised November 1984). More recently, the treatment load at PUDA is reported to be 115,000 gallons per workday (telephone communication, environmental engineer, PUDA, October 1990). The plant's functional capacity is believed to be about 5,000 gallons per day (telephone communication, environmental protection specialist, PUDA, August 1990).

PUDA's NPDES permit requires the removal of 85 percent of the biological oxygen demand and total suspended solids. Additional restrictions are placed on the quality of effluent discharged from the plant.

Two 7.5-acre lagoons are used for industrial wastewater treatment. Approximately 90 percent of the water treated is boiler blowdown water from heating boilers (telephone communication, environmental engineer, PUDA, October 1990). Normally, one lagoon is sufficient to treat the waste flow. The second lagoon is a backup facility for the industrial wastewater lagoon. It has also been used for domestic waste while repairs were being made on that facility.

- **Energy (Electrical)** Electrical service is provided to PUDA by the Southern Colorado Power Division of the Central Telephone and Utilities Corporation. Electricity is provided via a single 69 kilovolt (kV) line to a substation owned by and located on PUDA. The substation is equipped with one 5000 kilovoltampere (kVA) and two 3750 kVA transformers (Installation Environmental Assessment, PUDA, revised November 1984).

Electrical consumption in FY 90 was approximately 11.3 million kilowatthours (kWh) (telephone communication, Facilities Engineering Office, TEAD, May 1991).

- **Energy (Coal and Oil).** Most heating at PUDA is fueled by coal and heating oil. Three heating plants are fired by oil and one by coal. In FY 90, approximately 217,000 barrels of number 2 diesel fuel and approximately 3,600 tons of coal were used (telephone communication, Facilities Engineering Office, TEAD, May 1991).

- **Energy (Natural Gas)** Natural gas is provided to PUDA by the Public Service Company of Colorado. The gas is used for purposes in connection with installation housing. In FY 90, natural gas consumption at PUDA totaled 46,039 cubic feet (telephone communication, Facilities Engineering Office, TEAD, May 1991)

3.1.6 7.2 Area Communities

Changes in population due to realignment at Army installations could indirectly affect the operation of community water supply and sewage treatment systems. The communities most likely to be impacted are those in close proximity or adjacent to the Army installation and those providing a large part of the labor force for the installation. For this reason, the water supply and sewage treatment facilities of such communities in the PUDA area were evaluated for impacts. The communities determined likely to be affected are Pueblo, located approximately 14 miles west of PUDA, Boone, located 2 miles east of PUDA, and Avondale, located 2 miles south of PUDA. Based on the 1980 census, Pueblo and Boone had populations of 101,686 and 431, respectively, Avondale is unincorporated and is included in Pueblo County's total (Department of Commerce, Bureau of Census, 1980, Census of Population and Housing, 1981).

- **Water Supply** The city of Pueblo is provided water by the Pueblo Board of Water Works, which obtains raw water from the Arkansas River and has treatment capacity for 60 to 80 million gallons per day (MGD). Treatment includes filtration and chlorination. The maximum output of 80 MGD is for summer peak-use periods and is not available on a year-round basis. Average daily use in recent years has been 24 MGD, and peak use has only exceeded 60 MGD during one summer in the past 20 years (telephone communication, water resources engineer, Pueblo Board of Water Works, August 1990).

Boone obtains raw water from springs and occasionally from two of the eight city wells and provides chlorination. In dry years, Boone has water quantity problems during periods of peak use. Restrictions on lawn watering have occasionally been implemented during summer months to conserve water. The city serves a population of less than 500 (telephone communication, utility director, City of Boone, August 1990).

Water supply and sewage treatment services are provided to Avondale by the Avondale Water District. The District obtains raw water from two wells, and treatment consists of chlorination. Water is provided to approximately 400 households (telephone communication, Avondale Water District, August 1990). Assuming a household size of three, the District serves about 1,200 persons.

- **Sewage Treatment** Pueblo operates a new 19 MGD wastewater treatment plant. The plant provides secondary sewage treatment for the city's domestic waste. The average waste load is 13 MGD. Effluent from the plant is discharged into the Arkansas River, and Pueblo has not experienced problems meeting the conditions of the NPDES permit (telephone communication, utilities department, City of Pueblo, August 1990).

Boone operates two sewage treatment lagoons for wastewater disposal purposes. They are evaporation-only facilities (telephone communication, engineer, CDOH, August 1990).

The Avondale Water District operates two separate wastewater lagoons. One lagoon is aerated, and disposal of effluent is through two rapid infiltration beds. The other disposes of effluent by land application through irrigation or by discharging it into Collier Ditch (telephone communication, engineer, Colorado Department of Health, August 1990). There are currently no problems regarding Avondale Water District's NPDES permit. The lagoons serve approximately 325 households (telephone

communication, Avondale Water District, August 1990) Fewer households are provided sewer service than are provided water This is because it is more costly to provide sewer service than to provide water and not all customers need this service Water customers not connected to the sanitary sewer system use septic tanks for wastewater disposal Assuming a household size of three, the District provides sewage treatment for approximately 1,000 persons.

3.1.7 Hazardous and Toxic Wastes, Installation Restoration Program

This portion of the EIS discusses hazardous material baseline conditions at PUDA. Hazardous wastes and hazardous materials are discussed to the extent that they may be affected by realignment at PUDA Realignment of PUDA includes transferring portions of the current mission to other installations (TEAD, RRAD, ANAD, and SIAD) and curtailing support functions other than those required for the remaining activities, such as CHEM DEMIL Support functions include maintenance and monitoring of waste sites and materials, recordkeeping, interaction with regulatory agencies, and compliance with regulatory requirements

Compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) is accomplished through the Installation Restoration Program (IRP) The IRP is designed to identify, investigate, and evaluate the nature and extent of past waste management activities at active Federal facilities. The requirements of CERCLA integrate existing statutory obligations under RCRA, the Hazardous and Solid Waste Amendments, and applicable State requirements for remediating past uncontrolled waste sites

The IRP includes several phases to establish remedial action requirements under the Defense Environmental Restoration Program (DERP).

The first phase is usually referred to under CERCLA as the Preliminary Assessment/Site Inspection (PA/SI). The corresponding study performed under RCRA is the RCRA Facilities Assessment (RFA). Both studies may be performed at a single site to meet obligations under both RCRA and CERCLA. The RFA may be performed specifically as a requirement for gaining permitted status for current treatment, disposal, and storage activities at a facility. The second phase of the program is usually defined as the Remedial Investigation/Feasibility Study (RI/FS). Sites identified in the PA/SI as requiring further study and/or remediation under IRP are investigated in this phase. Remedial action requirements identified in the RI/FS are stated in the Record of Decision (ROD), which describes the selected remedy. The last phase is the Remedial Design/Remedial Action (RD/RA), which implements the ROD's site remedy to eliminate or mitigate any risks to the public and environment associated with past waste management activities or releases of hazardous and toxic wastes.

Each phase of the IRP is coordinated with Federal and State regulatory agencies to ensure compliance with applicable regulatory requirements. EPA monitors compliance with CERCLA and RCRA and has developed an independent evaluation of all sites in regard to the relative hazards associated with the sites and the risks to public health and the environment. One evaluation, the Hazard Ranking System (HRS), is a numerical determination of this relative risk; sites are ranked nationwide for required remediation. Sites scoring higher than 28.5 by HRS are placed on the National Priorities List (NPL). Federal facilities as well as private industry sites are included. PUDA is not currently proposed for placement on the NPL.

Various reports investigating possible contamination at and around PUDA as a result of past waste management practices have been completed. The reports listed below focused on several aspects of potential contamination at PUDA (although there are several reports detailing the

sampling performed) and the extent of contamination for those discrete areas studied at PUDA

- Army Pollution Abatement Program Study No D-1621-S, Hazardous Waste Special Study, Pueblo Depot Activity, U S Army Environmental Hygiene Agency, June 1980

- Ground-Water Consultation No. 38-26-1366-86, Evaluation of Solid Waste Management Units, Pueblo Depot Activity, U S Army Environmental Hygiene Agency, July 1986.

- Installation Assessment Relook Program Working Document, Pueblo Army Depot Activity, U S Environmental Protection Agency, September 1989

- Pueblo Army Depot Activity, Investigation and Evaluation of Underground Storage Tanks, U.S Army Corps of Engineers, September 1989

- Interim Resource Conservation and Recovery Act (RCRA) Facility Assessment, Pueblo Army Depot Activity, NUS Corporation, November 1987.

- Preliminary RCRA Facility Assessment, Pueblo Army Depot Activity, the EDGe Group, May 1988.

- RCRA Part B Permit Application for Open Burning/Open Detonation and Static Firing at Pueblo Depot Activity, Ebasco Environmental (EBASCO), November 1988.

- RCRA Hazardous Waste Permit Application for Pueblo Army Depot Activity, Chemical Stockpile Disposal Program, U S Army Corps of Engineers, September 1986

- RCRA Part B Permit Application for Selected Facilities at Pueblo Depot Activity, D'Appolonia, April 1984

- Update of the Initial Installation Assessment of Pueblo Army Depot Activity, Environmental Science and Engineering, August 1988.

- Enhanced Preliminary Assessment (PA) Report. Pueblo Depot Activity, Pueblo, Colorado, USATHAMA, March 1990

- Master Environmental Plan, Pueblo Depot Activity, EBASCO, July 1990

In general, the areas identified by the previous investigations may be grouped according to geographic location and operational function. These areas, depicted in figure 1-2, are the Western Demolition Area, Ammunition Workshop Area, Warehouse-Landfill Area, Eastern Demolition Area, and Munitions Storage Area

An RFA has been performed as a requirement of the RCRA permit application. As a result of the RFA, specific solid waste management units (SWMU's) have been recommended for further study under a RCRA Facilities Investigation/Corrective Measures Study (RFI/CMS), which is comparable to an RI/FS under CERCLA, to further define the nature and extent of contamination

The Enhanced PA for PUDA characterized the nature and extent of contamination and defined areas requiring environmental evaluation (AREE's) based on record/literature search studies, review of previous field investigations, and visual surveys

The AREE's/SWMU's in the five major areas on PUDA are depicted by number in figure 3-4. These AREE's are discussed in the following

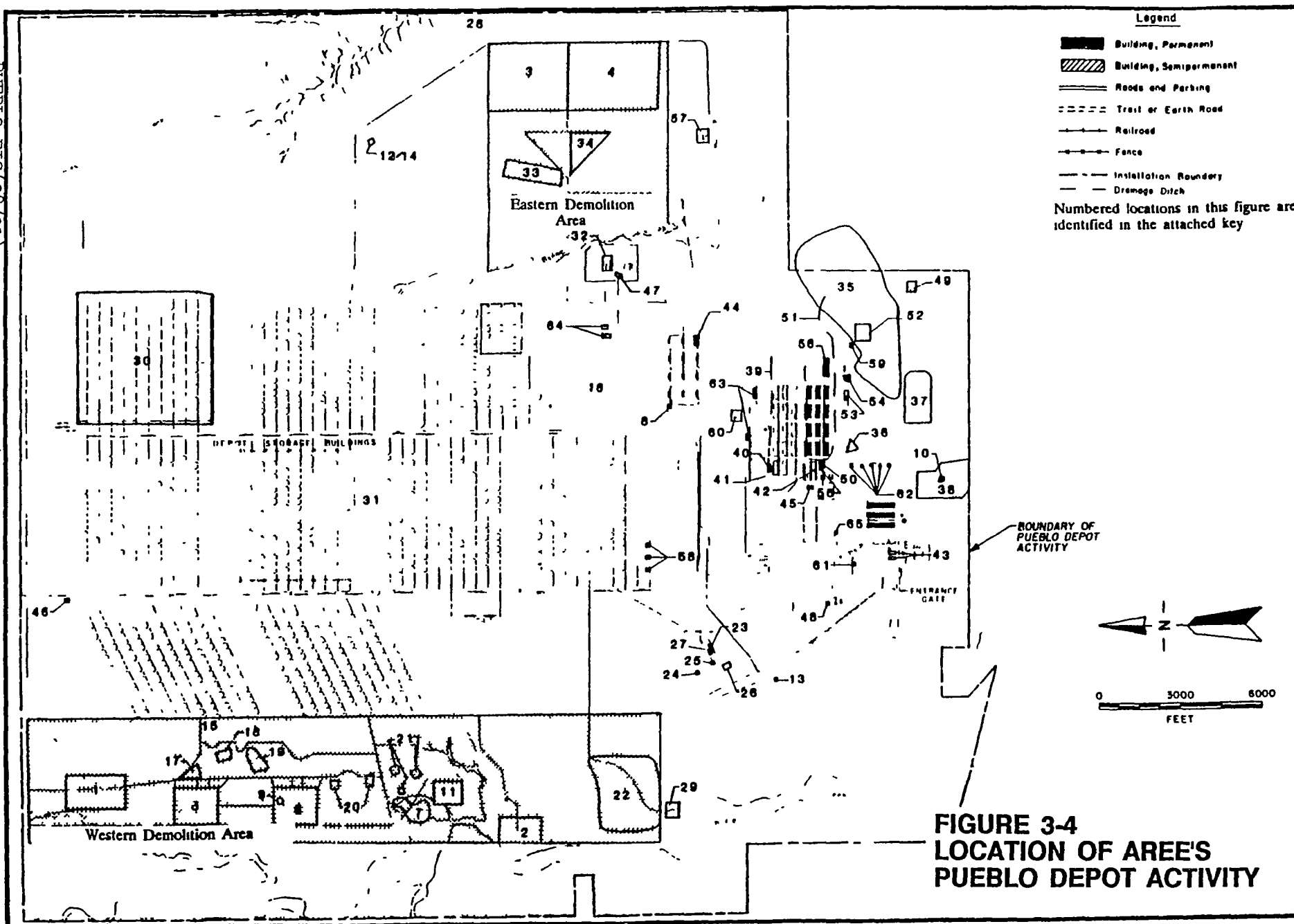
sections and include areas of identified and significant potential source area contamination. Active facilities are denoted by an asterisk in the key to figure 3-4. Fuel storage areas and hazardous waste and hazardous material storage areas are discussed separately in section 3.1.8, Hazardous Waste Material Management Program.

3.1.7.1 Western Demolition Area

The Western Demolition Area is located in the northwest portion of PUDA and encompasses approximately 3,015 acres. The primary activity associated with this area since 1946 has been the disposal and destruction of munitions, both chemical and conventional. Destruction included open detonation and thermal destruction of munitions. Past disposal may have included the burial of mustard and munitions as well as pyrotechnic devices. In addition, the sludge from the demolition pit and contaminated wastewater from the trinitrotoluene (TNT) washout facility were reportedly disposed of in this area during the facility's operation. Current waste management activities in this area have interim status under a RCRA permit application (EBASCO, 1988). The Enhanced PA concluded that this area contains 14 demolition pits in which from 4,000 to 5,000 pounds of ammunition per pit can be destroyed and disposed of per operation. Currently, an estimated 150 tons of conventional ammunition are demilitarized annually in this area.

Nine separate AREE's have been previously identified in this area:

- North Demolition Area
- North Burn Areas (1 and 2)
- Demilitarization Furnace Area
- Mustard Disposal Area
- Pyrotechnic Burning Cage
- Demolition Area



KEY FOR FIGURE 3-4

AREE
Map Number

PUDA AREE's^{1/}

- | | |
|----|---|
| 1 | * North Demolition Area |
| 2 | Demolition Area |
| 3 | East Burn Area 1 |
| 4 | East Burn Area 2 |
| 5 | * North Burn Area 1 |
| 6 | * North Burn Area 2 |
| 7 | Homemade Demilitarization Furnace Area |
| 8 | * Deactivation/Popping Furnace |
| 9 | Pyrotechnic Burning Cage |
| 10 | Inert Materials Burning Cage |
| 11 | Mustard Disposal Area |
| 12 | Chemical Munitions Burial Ground |
| 13 | Radiation Tube Burial Ground |
| 14 | Sodium-Filled Valve Burial Site |
| 15 | Zinc Chlorate/Chromate Burial Site |
| 16 | Unexploded Ordnance Area |
| 17 | Possible Pit 2,000 Feet West of Gate 23 |
| 18 | Excavation Pit 1,000 Feet Southwest of Gate 23 |
| 19 | Excavation Pit 2,500 Feet West of Gate 23 |
| 20 | Disturbances 2,000 Feet West of Gate 24 |
| 21 | Three Ground Disturbances 2,000 Feet Southwest of Gate 24 |
| 22 | Disposal Area North of Ammunition Disassembly Plant |
| 23 | TNT Washout Facility |
| 24 | TNT Leaching Beds |
| 25 | UDMH/RFNA Disposal Areas |
| 26 | * West Lagoon |
| 27 | * Industrial Waste Lagoons |
| 28 | Concentrated RFNA Disposal Site |
| 29 | Ammunition Disassembly Plant |
| 30 | * Chemical Munitions Storage Igloos |
| 31 | * Conventional Munitions Storage Igloos |
| 32 | * Liquid Propellant Storage |
| 33 | * Surveillance Test Range |
| 34 | Former Rifle/Pistol Shooting Range |
| 35 | Two Former Test Ranges |
| 36 | Radar Test Area and Building 231 |
| 37 | Combat Vehicle Test Track |
| 38 | * Landfill |
| 39 | Vehicle Drainage, North of Buildings 590 and 595 |
| 40 | Combat Vehicle Maintenance Shop, Building 595 |
| 41 | Combat Vehicle Maintenance Shop, Building 590 |
| 42 | Former Combat Vehicle Maintenance Shop, Building 547 |
| 43 | * General Vehicle Maintenance Shop, Buildings 45 and 46 |

KEY FOR FIGURE 3-4 Cont'd

<u>AREE</u> <u>Map Number</u>	<u>PUDA AREE's</u>
44	* Former Painting Operations, Building 716
45	Painting Operations, Buildings 545 and 546
46	Laboratory, Building 299
47	Laboratory, Building 406
48	Old Photo Laboratory, Building 144 (approximate location)
49	* Sewage Treatment Plant
50	Former Plating Shop, Building 539
51	Plating Shop Waste Drainage Ditch
52	* East Lagoons
53	Central Heating Plant, Building 524
54	Building 531
55	Former Painting Operations, Building 537
56	* Missile Facility, Building 529
57	* Guided Missile Workshop, Building 940
58	* Mercury Storage Igloos F101, F102, F103
59	* Hazardous Waste Storage Building 540
60	* Pesticide and Herbicide Storage, Structures 630 and S-630A
61	* Installation Gas Station
62	* Fuel Storage Sheds
63	* Fluorspar and Manganese Oxide Storage Piles
64	Former Nuclear Warhead Storage Area, Buildings 416 and 417
65	PCB Storage, Building 100

1/ asterisk denotes active sites

- Zinc Chlorate/Chromate Burial Site
- Disturbances and Excavation Pits
- Disposal Area North of Ammunition Disassembly Plant

• **North Demolition Area.** This area has interim status under a RCRA permit application for open detonation and is currently operational. Several field sampling investigations indicated that soils within the area are contaminated with TNT, TNT byproducts, and metals. The 1980 U.S. Army Environmental Hygiene Agency (USAEHA) investigation of area surface soils reported small amounts of TNT and Research Department Explosive (RDX). In 1981, in a followup sampling activity, 28 surface soil samples were collected from 6 of the detonation pits and near 4 other pits. High Melt Explosive (HMX), RDX, TNT, and Teteryl were detected in several samples in amounts ranging from 1.1 to 84 micrograms per gram ($\mu\text{g/g}$). Cadmium was detected eight times, with concentrations ranging from 0.10 to 0.20 milligrams per liter (Extraction Procedures Toxicity (EP Tox)). In 1985, in a subsequent study (USAEHA), 26 soil samples were collected and analyzed for metals and explosives in 1 detonation pit in the area. Arsenic (5.6 to 16.9 milligrams per kilogram (mg/kg)), cadmium (1.03 to 4.69 mg/kg), mercury (0.35 to 3.66 mg/kg), chromium (3.5 to 8.85 mg/kg), and lead (8.82 to 266.0 mg/kg) were detected in all samples. Barium was detected in four samples; the amounts ranged from 158 to 234 mg/kg. TNT was detected in 24 samples in amounts ranging from 1.1 to 10.8 $\mu\text{g/g}$.

The Army installed and sampled seven monitoring wells and three soil borings in the vicinity of the north demolition area. Preliminary results from 24 samples of shallow and subsurface soils indicated elevated metals in some samples. No volatiles or explosives were detected in the soil samples analyzed. Ground water samples indicated elevated levels of some metals and an explosive compound in the alluvial surficial water table.

- **North Burn Areas** Established in 1953, north burn areas 1 and 2 are located southwest of the north demolition area. A RCRA permit application has been submitted for both areas, however, only north burn area 1 is still active for static firing demilitarization of Pershing rocket motors and for open burning. In the past, both areas were used for the destruction/incineration and open burning of conventional ammunition, chemical munitions, and contaminated worker clothing. Specific chemical wastes disposed of in these areas include mustard munitions, unsymmetrical dimethylhydrazine (UDMH) and red fuming nitric acid (RFNA) wastes, propellant and fuels, and explosives.

Explosive compounds and elevated metals have previously been detected in the surficial and saturated subsurface soils during sampling (USAEHA, 1980, 1985) (Engineering-Science, 1989)

- **Demilitarization Furnace Area** The demilitarization furnace was located south of the north burn areas, 3,000 feet southwest of Gate 24. The open furnace began demilitarization of various types of munitions in 1950. It was dismantled in 1967 when the deactivation/popping furnace was installed within the Munitions Storage Area.

Visual site inspections conducted in 1985 and 1989 revealed stained soils in the vicinity of the former furnace area and ground scarring in several areas where it is assumed that spent ammunition and ash were disposed. In addition, several structures within a fenced area were found. The Enhanced PA literature search indicated that these structures housed the Mustard Munitions Quality Assurance Laboratory and an ammunition barricade. Damaged and leaking mustard munitions are reportedly buried in this area.

- **Mustard Disposal Area.** The 17-acre area south of north burn area 2 between Gates 24 and 25 has been operational since 1954. Between 1965

and 1967, leaking 105 mm and 155 mm mustard rounds were thermally destroyed at this site. The oil-fired incinerator used shaped charges to split the shells and release the mustard into the fire. Since 1968, leaking mustard rounds have been neutralized with bleach, dried, sealed in pressurized containers, and stored in the Igloo Block G area of the Munitions Storage Area.

Previous soil sampling (1988) in the area revealed explosives, but no degradation products of mustard agent were detected.

- **Pyrotechnic Burning Cage.** The open cage located near the southern boundary of north burn area 2 was used to destroy flares, simulators, fuses, and firing caps from 1965 through 1985. In 1985, the cage was used to destroy ignitors from rocket motors and illegal fireworks confiscated by the Pueblo City Police and County Sheriff's Departments. The cage is no longer used, and it is not covered under a RCRA permit application.

In 1980, USAEHA collected samples of ash residue within the cage and analyzed them for metals and explosive compounds. Cadmium was detected at 738 micrograms per liter ($\mu\text{g/L}$) (EP Tox), arsenic at 14.6 mg/kg, barium at 447 mg/kg, chromium at 29.2 mg/kg, mercury at 0.99 mg/kg, and lead at 2,160 mg/kg. No explosives were detected in the ash sample.

- **Demolition Area.** In a 25-acre area southwest of Gate 25, demolition operations (detonation of bombs, mustard rounds, and artillery rounds) were conducted from 1946 to 1953 both in the open and in a burning cage. The residuals of the burning activities were buried in long trenches and pits on the site. No sampling has been performed in this area. Potential contamination at the site may be considered similar to that present at the pyrotechnic burning cage and in the demilitarization furnace area; i.e., explosives and metals in surficial soils and the subsurface environment, as well as surficial ground water contamination.

- **Zinc Chlorate/Chromate Burial Site** In the mid-1960's, in a ravine near the north burn areas, approximately 5,000 180-milliliter cans containing zinc chlorate were discovered partially covered with soils. These cans reportedly were excavated and reburied in a location southwest of Gate 23, although it is doubtful whether the materials were overpacked or further containerized prior to disposal. Despite the geophysical survey conducted in this area, the exact location of the disposal area has not been identified (EDGE, 1988) Chemical sampling has not been performed at the site to identify the potential contaminants in the visually stained, stressed vegetated areas. Zinc chlorate is a strong oxidizer that was used previously as a primer in the manufacture of chemical explosives and for propellants. Zinc chromate is used as a primer in paint and is stored in several buildings throughout the installation

- **Disturbances and Excavation Pits** Several pits, excavation areas, and ground disturbances were identified in aerial photographs as being within the Western Demolition Area. Some pits contained liquids or light-colored debris. Visual staining, as well as stressed vegetation, in these areas indicates potential disposal activities. No chemical sampling has been initiated in these areas, although potential contaminants, such as explosives and metals, may be similar to those found in other areas within the Western Demolition Area

- **Disposal Area North of Ammunition Disassembly Plant.** This area is believed to be a former disposal area for the residue from OB/OD. Surface debris--slag, wood, wire, and nails--was observed during a visual assessment. Past use of this area may have included OB/OD and burial activities of ammunition

3.1 7 2 Ammunition Workshop Area

The Ammunition Workshop Area is located in the southwestern corner of PUDA. The AREE's identified in this area are listed as follows

- TNT Washout Facility
- TNT Leaching Beds
- West Lagoon
- RFNA Disposal Area
- UDMH Disposal Area
- Ammunition Disassembly Plant

Figure 3-4 shows locations of each AREE in the Ammunition Workshop Area. This area has been used since 1940 for maintenance, disassembly, and reclamation of ammunition. Primary activities have included the removal of fuses, the removal of ammunition from casings, and the cleaning of missile fuel tanks. Liquid waste streams from these operations have been disposed of at nearby lagoons and the treatment facility. Most activities in this area have ceased, with the exception of the west lagoon, which is used to manage and store wastes.

- **TNT Washout Facility and TNT Leaching Beds** Constructed in the 1940's to remove explosives from standard ammunition, the original washout facility contained process lines to remove TNT. Water was used to remove the TNT from the casing. The water then drained into a series of leaching beds or evaporation ponds. The excess residual powder was collected from the beds and sold as fertilizer. The remaining liquid from the operation went through a series of screens and settling tanks to remove solids prior to its release into an outdoor sump area. The sump drained into a ditch running parallel to the facility and led to a leaching bed in a natural drainage area west of the facility. In 1960, a new interior sump was added to the operation, and waste streams drained into the west lagoon.

In the late 1970's, the soils in the drainage area and leaching beds were dredged and transported to a landfill outside PUDA. The facility ceased operations in 1974, although all physical structures remain. During investigations, visual staining was noticed in the leaching beds and adjacent low topographic areas after removal activities were concluded

Sampling performed in 1988 and 1989 indicated levels of TNT as high as 10 percent in surficial soils and subsoils. Ground water sampling performed by the Army for monitoring wells installed in this vicinity indicated elevated concentrations of metals and explosives in the surficial aquifer

- **West Lagoon** Constructed in 1977 to accommodate waste streams from the industrial activities in the area, the west lagoon was connected to the TNT washout facility and the steam boiler plants. In 1978, a fuel spill from one of the boiler plants with TNT washout contents drained into the lagoon. This degraded the polyethylene liner which was replaced later that same year. Prior to installing the new liner, soils were overexcavated and taken to the open detonation area for disposal. The west lagoon is still used to receive boiler blowdown from the boiler plant.

Monitoring wells were installed around the perimeter of the lagoon in 1977. Several sampling rounds were conducted during the period from 1987 to 1989. Analysis of the samples indicated elevated levels of metals in downgradient wells, although explosives were not detected during any sampling period.

- **RFNA Disposal Area** RFNA was reportedly disposed of during a one-time operation in 1955. The acid was drained into a limestone-lined pit on the eastern edge of the installation. The vegetation in the area

identified as the disposal pit is not stressed, and there is no visible staining evident. No chemical sampling or geophysical sampling has been performed in this area.

- **UDMH Disposal Area.** This disposal area has been identified as a concrete washing basin and evaporation pad in the western end of the TNT washout facility. Empty fuel tanks containing UDMH and RFNA were steam cleaned in the concrete basin, and the wastewater was pumped to the concrete evaporation pad. The wastes were heated to accelerate volatilization of the residual propellant before the wastewater was drained to an open sump. The ultimate disposition of these waste streams is unknown.

Both UDMH and RFNA may have been in contact with soils in the Ammunition Workshop Area since the 1950's, although the volatile nature of the compounds precludes persistence in the environment. Soil sampling in this area--targeted for degradation products of UDMH--indicated no contamination. Ground water sampling of a downgradient monitoring well indicated elevated metals only.

- **Ammunition Disassembly Plant.** Although no longer used, the plant structures still remain on the site. These structures include the disassembly plant areas and the vacuum dust removal areas and are separated by earthen bunkers. It is known that M-30's, guided missiles, and bombs were disassembled after World War II, however, the actual closure date for the plant is not known. Although no chemical sampling has been performed on the site, which is located in the southwestern portion of PUDA, TNT and metals may have contaminated soils and ground water in the area.

3 1 7 3 Warehouse-Landfill Area

Located in the south-central portion of PUDA, this area includes administration facilities, maintenance and repair shops, warehouses, storage areas, and family housing. Nineteen separate AREE's were identified in this area. The 11 AREE's of concern are listed and discussed on the following pages.

- Landfill Area
- Fire Training Pit
- Radar Test Area
- East Lagoons
- Two Former Test Ranges
- Fluorspar and Manganese Oxide Storage Piles
- Installation Gas Station
- Old Photo Laboratory
- Missile Facility
- Combat Vehicle Maintenance Shops
- Sewer Systems

The majority of the buildings at PUDA are located in this area. Most were constructed in the 1940's, but additional facilities have been built to accommodate mission variation and expansion. Most of these facilities are still active, with the exception of several maintenance shops and warehouses. Figure 3-4 indicates the locations of these AREE's.

- **Landfill Area** Located on the southern boundary of PUDA, this area encompasses 150 acres of land. The landfill has been used since 1941 for disposal of installation wastes. Wastes were openly burned in the landfill area until the late 1960's. The landfill currently operates under a Certificate of Designation issued by Pueblo County for disposal of sanitary wastes and construction debris, including material containing

asbestos. It is currently being investigated as part of an RCRA Facilities Investigation (RFI) being performed at PUDA

In addition to accepting sanitary and industrial wastes from PUDA, the landfill also houses a missile carcass disposal area. It was reported that, in the 1980's, 150 to 200 drums containing unknown material were stored in the landfill.

Monitoring wells installed around the perimeter of the landfill have detected the solvents trichloroethylene (TCE) and dichloroethylene in ground water. A soil gas survey in the landfill area in 1989 also detected solvents both in the soils and in surface water samples from ditches and seeps downgradient of the landfill area outside the installation boundary.

- **Fire Training Pit.** A fire training pit was constructed in the northern portion of the landfill in the 1980's to burn off-specification fuels. The pit reportedly was used. Training activities have since ceased, and the pit has been overexcavated and lined.

- **Radar Test Area.** This area was constructed in the mid-1960's to test various missile radar and antenna systems. It was in use until 1977. All towers have been removed from the site.

- **East Lagoons.** Two lagoons comprise the east lagoons. The northernmost lagoon was constructed in 1977 to receive wastewater from the industrial facilities in the metal processing Warehouse-Landfill Area. The facilities were connected to the lagoon via an underground piping system. Another lagoon was built to the south of this lagoon in the early 1980's to accommodate overflow from the existing lagoon. Each lagoon is lined and the wastes accepted include boiler plant blowdown water from Building 524, Building 537, and other activities. An RFI/CMS is currently

being conducted to determine the nature and extent of contamination at the site and the potential for closure under RCRA

Eight monitoring wells were installed around the lagoons in 1977 to detect any contaminants in the underlying ground water that could be attributed to the lagoons. Elevated levels of metals, as well as volatile organic contaminants, were detected in several sampling rounds in downgradient wells. These wells are also downgradient of the associated industrial facilities on the installation.

- **Two Former Test Ranges** The test ranges, or firing ranges, were identified from historical aerial photos. During a visual survey, gun mounts and spent cartridges were observed littered over surface soils. It is assumed that the area may also contain unexploded ordnance (UXO) in subsoils. No chemical sampling has been performed in this area, although it can be concluded that surface soils in some areas of the site may contain metal contaminants above background levels.

- **Fluorspar and Manganese Oxide Storage Piles.** In 1976, the DLA began storing fluorspar on two open lots north of the Warehouse-Landfill Area and south of the Munitions Storage Area. The fluorspar is stored next to a manganese oxide pile on an asphalt slab surrounded by a partial berm. No sampling has been performed in this area, although it is assumed that these piles present no impact to the environment in their present state. Further investigation is planned prior to and following eventual removal of these stocks from PUDA.

- **Installation Gas Station.** Over a period of a year, fuel from two underground storage tanks (UST's) spilled/leaked from pipes into subsurface soils. Both UST's were removed in 1986. Soils beneath the UST's were sampled for fuels and fuel components. Benzene, xylene, and toluene were detected in soil samples taken 8 feet below ground surface.

Ground water, found at 20 feet in this area, has not been sampled for fuel or fuel components. It is assumed that the fuel has migrated to saturated soils and ground water in this area, given the volume of the release and the depth to ground water.

- **Old Photo Laboratory.** The old photo laboratory is located next to the Community Club in the Warehouse-Landfill Area. Chemicals used in the photo processing--silver, sodium thiosulfate, and other materials--were disposed of in a waste sink, which drained into a UST beneath the laboratory. Disposition of the UST wastes is not known, nor is the UST integrity known. No chemical sampling has been performed in this area to date. The past waste management activities predate RCRA requirements for storage and disposal. The site is scheduled to be assessed for corrective action/corrective measures under the IRP.

- **Missile Facility.** The missile facility, Building 529, is located on the east side of the Warehouse-Landfill Area in a high-security area. Activities in this facility were classified. The facility was constructed between 1959 and 1961 to perform various maintenance operations on the Pershing missile system. The original floor drain in the facility drained into an open field, however, the drainage system was later rerouted to the east lagoons. Wastes that may have been generated at this facility include solvents, metals, organic compounds, and acids. The vegetation surrounding the facility and the open drainage field is visibly stressed. It is believed that 2,4-D (a herbicide that was used in ground maintenance) is the cause. No sampling has been conducted in the vicinity of this facility.

- **Combat Vehicle Maintenance Shops.** Metal plating operations were carried out in Building 539 until 1980. Operations included paint and corrosion stripping, ferrous stripping, nickel stripping, chrome plating, and degreasing, as well as other various plating activities. Treated

waste streams were discharged into a ditch that runs west to east along the southern boundary of the Warehouse-Landfill Area. The building was torn down in 1981. The other maintenance shop, Building 547, was constructed in 1942 and was used for tank rebuilding and degreasing operations and painting. Wastes were originally discharged into the storm sewer system, which ultimately discharges into Boone Creek. Later, industrial wastewater was discharged into the last industrial waste lagoon.

A soil gas survey was conducted in the vicinity of these buildings in 1989 (EBASCO). TCE and perchloroethylene (PCE) were detected in soils near the former plating shop (Building 539) and an unnamed ditch south of the plant road. The preliminary results of the RFI performed in 1989 showed that soil samples from the disposal ditch contained trace amounts of TNT and polychlorinated biphenyls (PCB's) as well as elevated concentrations of metals. The presence of TNT is thought to originate from another source on the installation as a result of surface water transport. The ground water investigation indicated elevated concentrations of metals, including chromium, downgradient of the shop areas. TCE and PCE were also detected in ground water samples.

- **Sewer Systems** All other facilities designated as AREE's had direct disposal to the sewer systems. The systems consist of the sanitary sewer system, the industrial waste lines, and the stormwater system. The sanitary system was installed in the 1940's, and industrial as well as sanitary wastes were disposed of in the lines. The integrity of the sanitary lines is not known; there may be leaks along the line leading to the east lagoons. The industrial line was installed in 1977 to direct industrial wastes to the east lagoons. Prior to that time, wastes were allowed to drain into adjacent ditches or into the sanitary sewer system.

3.1.7 4 Eastern Demolition Area

Six AREE's in the Eastern Demolition Area were identified in the Enhanced PA. They are as follows:

- Eastern Demolition Complex
- Chemical Munitions Burial Ground
- Sodium-Filled Valve Burial Site
- Liquid Propellant Storage Area
- Laboratory, Building 406
- Guided Missile Workshop

The 10-square-mile Eastern Demolition Area is located along the eastern boundary of PUDA. During investigations, it was determined that the AREE's in this area are the oldest on PUDA. These areas and facilities were used during the early operation of PUDA. No current activities are being conducted at any of these areas.

• **Eastern Demolition Complex** The 1,000-acre complex is located in the southern portion of the Eastern Demolition Area. Most activities in the area were delineated on historical aerial photographs. East burn areas 1 and 2, the surveillance test range, and the former rifle/pistol shooting range are all individual sites within the perimeter of the complex. Approximately 500,000 rounds of conventional ammunition were demilitarized through demolition activities in these areas from 1946 to 1953. At least four burn pits have been identified in east burn area 2. It is assumed that most of the demolition activities took place in numerous scattered trenches within each burn area. The surveillance test range is located north and east of the former rifle/pistol shooting range. Visual surveys of the site indicate noticeable impact areas. These areas are a result of the demolition activities. The former rifle/pistol shooting range is still used by military personnel for qualification.

firing Pits and mounds in the area appear to be associated with the east burn areas

Sampling activities conducted during the investigations indicate metal contaminants above background levels in east burn areas 1 and 2 (Engineering-Science, 1989). Analyses for explosives and organic contaminants were not performed. As in the north burn areas in the Western Demolition Area, soil and ground water may have been contaminated with TNT and other constituents.

- **Chemical Munitions Burial Ground** The chemical munitions burial ground occupies approximately one-fourth acre in the center of the Eastern Demolition Area. The burial area is fenced and is located directly adjacent to East Range Road. The bombs were thermally and chemically decontaminated in a pit lined with bleach, dunnage, and fuel. The pits were then backfilled, and warning signs were posted on the fencing. This area was used from 1942 to 1946 to destroy M-70 bombs containing mustard agent.

No sampling has taken place at this site. There are no monitoring or production wells in the Eastern Demolition Area, therefore, no ground water sampling has occurred. It is possible that mustard agent and its breakdown products may be present in soils and ground water as a result of past site activities.

- **Sodium-Filled Valve Burial Site** A records search indicated that in early 1960 six to eight sodium-filled stainless steel valves were buried in a pit in the Eastern Demolition Area. The exact location, however, has not been determined. Sodium, when exposed to air or moisture, may react violently. Although the containers are corrosion resistant, the soils in the area may enhance degradation, and soil

contamination may occur, resulting in elevated metal concentrations in the vicinity of the burial site.

- **Liquid Propellant Storage Area** This storage area is located on the west side of the Eastern Demolition Area. The facilities consist of two large warehouses. No information was available on the location, types, and quantities of the propellants that were stored here or on possible spills that may have occurred in the past.

If spills did occur in the past, the soils and possibly the ground water in this area may be contaminated with propellants and other fuels. The exact constituents to be expected are hydrazine, UDMH, and jet fuels.

- **Laboratory, Building 406** This laboratory is located adjacent to the liquid propellant storage area. From approximately 1965 until 1973, this facility was used to reclaim gold and silver from electronic components. The process used cyanide, acids, and basic solutions. The drains from this facility lead to a large septic tank, a leach field, and two dry wells on the site. One drain on the site leads to the concrete headwall above Linda-Ann Reservoir.

No soils or ground water has been sampled in this area to date. Contaminants that may be present in soils and ground water include volatile organic, semivolatile, and metal contaminants.

- **Guided Missile Workshop.** The guided missile workshop, Building 940, was constructed from 1970 to 1973 for the repair and maintenance of components for the Hawk guided missile. Several pits south of the building were observed on aerial photographs and during site visits. These pits were identified on photos prior to 1970 and may be part of the Western Demolition Area. Chemicals that may have been stored at the site include solvents, paints, and explosives compounds. These chemicals may

be present in site soils and ground water as a result of past activities. No sampling activities have occurred in this area, although spills and releases of chemicals into the surrounding environment may have occurred in the past.

3.1 7 5 Munitions Storage Area

Eight AREE's in the Munitions Storage Area were identified in the investigations

- Deactivation/Popping Furnace
- Unexploded Ordnance Area
- Chemical Munitions Storage Igloos
- Conventional Munitions Storage Igloos
- Laboratory, Building 299
- Mercury Storage Igloos
- Former Nuclear Warhead Storage Areas, Buildings 416 and 417
- Painting Facility, Building 716

The Munitions Storage Area encompasses approximately 12 square miles in the north-central portion of PUDA. The area is located on a high plain, and all surface water drains to the Eastern and Western Demolition Areas. The Munitions Storage area has been used to store munitions since PUDA opened in the 1940's. Most of the areas, except the former nuclear warhead storage areas, the UXO area, and the laboratory, are still actively storing munitions. No sampling of soil or ground water has been conducted at any of the identified AREE's in this area.

- Deactivation/Popping Furnace. The deactivation/popping furnace, located at the southeast end of the Munitions Storage Area, was used intermittently from 1968 to 1989 to demilitarize explosive ordnance. Operations at the facility ceased in 1989 when interim status under RCRA

for OB/OD was revoked. The wastes generated by the furnace were fugitive dust, filter bags, and metallic components associated with the ammunition. Fugitive dust from the operation was eliminated when a capture system (baghouse) was installed at the facility. Filter bags were disposed of on the facility, and metallic components were recycled or sold.

Potential contamination at the site may be expected from metals and from explosives dispersed as fugitive dust prior to the baghouse installation. Contaminant-bound dusts were deposited on surface soils in and around the facility. No air monitoring/modeling has been performed to determine the potential extent of dispersion and subsequent contamination of the facility and surrounding areas. Fuels used to operate the furnace may also be present in surrounding soils and potentially in ground water beneath the site as a result of unreported spills during activities.

- **Unexploded Ordnance Area** The UXO area occupies 1 square mile along the southeast corner of the Munitions Storage Area. Munitions were scattered around in this area when lightning struck a storage pad in the 1940's. No ordnance clearance has been conducted at the site, nor has any sampling been performed. Sampling to confirm the existence/nonexistence of contamination will be performed.

- **Chemical Munitions Storage Igloos** Chemical munitions at PUDA were first stored in the Igloo Block C area and were moved to the Igloo Block G area in 1979, where they remain today. The munitions are stored in concrete earth-covered igloos which are sealed from the environment. Leaking containers of munitions were neutralized, dried, and sealed in pressurized containers and were also stored in this area. All chemical munitions are scheduled to be demilitarized in the proposed CHEM DEMIL facility in 1998.

During the 11 years of storage, several leakers have been detected and treated. Releases of mustard were neutralized and removed from the area. The potential exists, however, for residual mustard agent and degradation products to exist in site soils, the underlying aquifer, and perhaps in the structures themselves. In addition, the residual agent may also be encountered in the Igloo Block C area, where storage previously occurred. Agent and agent-contaminated materials may not be released to the public, nor may the public be allowed to come into contact with these materials. Specific requirements for decontamination prior to release include thermal treatment of materials at very high temperatures. This would include the igloo structures.

- **Conventional Munitions Storage Igloos** Conventional munitions are currently stored in munition igloos. The igloos are concrete earth-covered structures with drain ports located in the front of them to drain any moisture from the storage areas. During World War II and the period following, PUDA accepted munitions in excess of capacity, and munition weapons were stored in the open on concrete pads. No sampling was performed in this area.

- **Laboratory, Building 299.** Located north of Igloo Block A, this building is currently used as the office for the Endangered Species Program. The structure was also used in the past as an ammunition renovation shop. An aboveground water tank is located near the building on the east side. Sampling to confirm the existence/nonexistence of contamination will be performed.

- **Mercury Storage Igloos** Lead containerized elemental mercury has been stored in the Igloo Block F area since the 1970's. Prior to that period, several hundred tons of mercury were stored in Building 543. The igloos are ventilated to the open air, and past mercury spills have

occurred in this area. Sampling to confirm the existence/nonexistence of contamination will be performed.

- **Former Nuclear Warhead Storage Area, Buildings 416 and 417.** Sealed warheads were purported to be stored in these buildings between 1955 and 1966. No other information is available. No radiological survey has been conducted in this area.

- **Painting Facility, Building 716** A paint booth, located in Building 716, is currently operational. Solvents and paints were reportedly stored in the area, and discharge of waste streams may have occurred both in the facility and in the surrounding site soils. Sampling to confirm the existence/nonexistence of contamination will be performed.

3.1.7.6 Summary

In general, the contaminants detected/suspected in all five areas of PUDA include the explosives TNT, dinitrotoluene (DNT), and RDX, metals, and chemical warfare agents such as mustard agent, degradation agents, rocket propellant, and solvents for all environmental media (soils, surface water, and ground water). Previous investigations have been limited to discrete areas within the Ammunition Workshop Area and the Western Demolition Area. Further detail is available in the references provided in the preceding discussion.

3.1.8 Hazardous Waste and Material Management Program

3.1.8.1 Hazardous Wastes

Current wastes generated at PUDA are a result of specific activities associated with mission functions. The waste management program is

divided into several areas. waste-generating activities, treatment, storage, and disposal of hazardous wastes

Waste-generating activities include demilitarization of conventional ammunition, the INF Static Missile Firing Program, demilitarization of chemical munitions, maintenance activities, painting, and degreasing.

A RCRA Part A application was submitted to EPA Region VIII for the following specific hazardous waste treatment, storage, and disposal facilities hazardous waste storage facility, Building 540; open detonation area in the north demolition area; two open burning areas, north burn areas 1 and 2, static firing area for the INF program in north burn area 1, and the chemical munitions storage and treatment area in the Igloo Block G munitions storage area A RCRA permit application was submitted for demilitarization of munitions in November 1988. OB/OD for conventional ammunition is covered under RCRA interim status regulations The static firing of missiles under the INF treaty and the destruction of conventional ammunition are included in this application for interim status Specific facilities for treatment include a thermal demolition area for each OB/OD and a static firing area for Pershing missile systems. The deactivation incinerator, or popping furnace, currently is not operational Specific hazardous wastes being generated from these demilitarization operations are explosive wastes and propellant wastes (D003)

CHEM DEMIL will become a primary mission at PUDA. A RCRA permit application has been submitted for this specific activity--to be initiated in 1997. Specifics regarding CHEM DEMIL for PUDA will be detailed in a subsequent EIS.

Hazardous waste storage has interim status under RCRA regulations. The hazardous waste storage facility, Building 540, is located in the southern portion of the installation and is operated by the DRMO. Wastes generated from specific operations at PUDA are properly containerized and stored pending transport and disposal by DRMO. The facility currently accepts wastes from the missile repair shop, Building 529. The wastes include ammonium bifluoride; sodium dichromate; TCE, turco acid; painting wastes and thinners; solvents, such as trichloroethane and carbon tetrachloride, from various maintenance facilities, explosive wastes from OB/OD, and waste fuels.

PUDA has one active solid waste landfill, which, although it does not currently accept hazardous wastes, does accept sanitary waste, building debris, and asbestos materials. The landfill operates under a Certificate of Designation from the Pueblo County Commissioners that was approved by the CDOH. The landfill, as discussed earlier in section 3.1.7, previously accepted industrial wastes and sludges from PUDA operational activities. CDOH issued a draft corrective action order relative to the ground water migration of leachate generated from the landfill area discharging to surface water beyond the installation boundary. The landfill is currently being investigated under an RFI performed by the USACE.

3.1.8.2 Hazardous and Toxic Materials

Hazardous materials (fuels, munitions, solvents, PCB's, paints, and pesticides) are stored at various areas throughout the installation. The active storage facilities are denoted by an asterisk in the key for figure 3-4 and are discussed in section 3.1.7. The active facilities include the pesticide and herbicide storage structures, Buildings 630 and S-630A; the fluorspar and manganese oxide storage piles and other DLA stocks, the PCB storage area, Building 100, the conventional ammunition and chemical

munitions storage igloos; the liquid propellant storage area; the fuel storage sheds; and the paint and solvent storage area, Building 940.

PCB's and PCB transformers are located in various areas at PUDA. The PCB storage area, Building 100, houses out-of-specification material (as a result of testing for compliance with the Toxic Substances Control Act (TSCA) and leaking transformers. Presently, a management program is followed; the program monitors the status of transformers and analyzes and classifies transformers into three categories based on the PCB concentration. Transformers are routinely replaced with non-PCB transformers as part of the management program. Leaking transformers are removed, containerized, and stored at Building 100, awaiting commercial disposal.

In addition to the fuel storage sheds and the liquid propellant storage area, there are 28 UST's that are used primarily to store fuels throughout the installation. A preliminary facility-wide UST survey was conducted to inventory and assess the status of known UST's (USACE, 1989). The installation has an ongoing program for testing, replacement, and removal to ensure compliance with applicable Federal and State requirements. Currently, 4 UST's at PUDA will be replaced in 1990-91, as of the most recent study, and 8 tanks will be removed, leaving 16 operable UST's at the conclusion of the remediation.

Asbestos materials have been identified in most older structures on the installation. A preliminary survey conducted in 1990 identified all buildings on PUDA containing asbestos and asbestos-containing materials. Only one structure, Building 547, has undergone asbestos abatement, with further surveys/remediation planned for other facilities beginning in 1991 by USACE.

3.2 TOOELE ARMY DEPOT

The following is a discussion on TEAD generally as described in the Installation Environmental Assessment, Tooele Army Depot, North and South Areas, 1982, revised November 1984.

3.2.1 General

TEAD is located in north-central Utah. Although under one command, TEAD consists of two separate areas--the North Area (TEAD-N) and the South Area (TEAD-S). TEAD-N is located in Tooele Valley approximately 2 miles south of the city of Tooele and 35 miles southwest of Salt Lake City. TEAD-S is located in Rush Valley approximately 15 miles south of TEAD-N. With the exception of the nearby cities of Grantsville, Tooele, and Stockton and the occasional residential development north of the city of Tooele, Tooele Valley is predominantly undeveloped. The TEAD-N area has a deep historical tradition of Indian cultures. The early Desert Archaic Indians inhabited Tooele Valley some 11,000 years ago. They were followed by the Late Desert Archaics, the Fremont culture, and the Numic-speaking culture. These were followed by explorers, such as Jedediah Smith and Captain John Fremont, and wagon trains. Employees of Brigham Young began grazing stock in Tooele Valley during 1848, and the first settlers entered the valley in 1849. Although originally a grazing area, agriculture became a major industry when the first railroad entered the valley. Heavy grazing turned the major portion of the valley into a dust bowl. Mining began in 1859 and has played a major economic and environmental role since then.

TEAD-N, which currently consists of approximately 25,700 acres of land, was established in April 1942. This area, then known as the Tooele North Area Ordnance Depot, functioned as a storage depot for World War II supplies, ammunition, and combat vehicles. It expanded to include command of the Ogden Arsenal in 1949 and its mission when the arsenal was discontinued in 1955. It assumed both command of the Deseret Chemical Depot and the missions of the deactivated Benicia Arsenal and Mount Rainier Ordnance Depot in 1961. It also assumed maintenance mission responsibilities for various equipment from the Granite City Army Depot in 1979. Four other Depot Activities were brought under Tooele Command: Umatilla in 1973, Navajo and Fort Wingate in 1975, and PUDA in 1976. Rush Valley, the location of TEAD-S, has a history similar to that of the TEAD-N area. The TEAD-S installation, an area of approximately 19,400 acres, was originally the Deseret Chemical Depot. It was established in 1942, and its mission involved the storage and maintenance of chemical munitions. This installation became a Depot Activity, eventually became a part of TEAD, and was designated TEAD-S.

The typical building at TEAD was constructed in the early 1940's and consists of a wood-frame structure. A large majority of the buildings are poorly insulated. These buildings include facilities for administration, general services, shops, warehouses, utility services, recreation, housing, workshops, and storage. Igloo storage and open revetment storage are generally located in the central and east-central portions of TEAD-N and the northwest and central portions of TEAD-S. Most other facilities are located in the eastern portion of TEAD-N and the northeast portion of TEAD-S. The 1,900 buildings at TEAD are generally in good condition.

The supply mission to be transferred from PUDA will be housed in a new warehouse and in five renovated warehouses at TEAD-N. Because there will be no activity at TEAD-S associated with this realignment action, this EIS only discusses TEAD-N.

3 2.2 Current Mission

TEAD is one of the major ammunition storage and equipment maintenance installations in the continental United States. Its 12 directorates are responsible for providing the planning, direction, coordination, design, testing, scheduling, budgeting, administrative and support services, and many other activities required in the support and performance of TEAD's missions.

As of 30 June 1990, TEAD also provided space for the following tenants.

- Agency for International Development
- Army Veteran and Education Subcenter
- Atmospheric Sciences Laboratory Tooele Meteorological Team
- Defense Reutilization and Marketing Office
- Marine Corps Reserve Center
- Office of the Program Manager for Chemical Demilitarization
- U S. Army Engineering and Housing Support Center
- U.S. Army Health Clinic
- U.S. Army Information Systems Command
- U.S. Army Reserve Center - Tooele
- U S Army TMDE Support Center
- U.S. Army TROSCOM Mobile Rail Shop
- Utah Environmental Health Section and Industrial Hygiene
- Utah National Guard

3.2.3 Physical Environment

3 2.3 1 Physiography

Tooele Valley is a sedimentary basin lying between two fault-block mountain ranges the Oquirrh Mountains to the east and the Stansbury Mountains to the west. The entire valley was once inundated by ancient Lake Bonneville. The valley consists of moderately consolidated and unconsolidated layers of sand, gravel, silt, and clay. The underlying bedrock has been submitted to various geologic stresses which have created a series of troughs and ridges, therefore, the thickness of the overburden varies considerably. Bedrock approaches the surface at several locations but has not been encountered in other areas by drilling operations ranging from depths of 290 to 7,100 feet.

Tooele Valley contains a wide variety of mineral resources. Mining has been a continuous activity in the valley for many years, especially in the Oquirrh Mountains. The major minerals currently being extracted in the area include copper, dolomite, gold, gravel, lead, limestone, mercury, salt, sand, silver, and zinc.

Two potentially active fault zones occur in Tooele Valley, and a third extends into Tooele Valley from Rush Valley. No major earthquakes have been recorded in Tooele Valley since its settlement. The nearest have occurred in the western slopes of the Stansbury Mountains (1915) and at Magna, Utah (1962). Numerous "micro-earthquakes" of low magnitude have been recorded in the valley, clustering generally around either Flux, Utah, or the southwestern portion of TEAD-N. These events have probably reflected blasting operations in limestone quarries or ammunition disposal operations.

Although recent seismic activity has been light and no surface movement caused by earthquakes has been reported, the area may be considered as potentially active in spite of a lack of evidence to the contrary. It may also be assumed that many potentially active faults remain undetected.

Tooele Valley contains three topographic zones

- Steep to abrupt slopes in the mountainous areas that form the eastern and western boundaries,
- Moderate to steep slopes in the transition zone between the mountains and the valley floor, and
- Gentle to moderate slopes on the valley floor

Elevations range from 11,031 feet m s l at Desert Peak, located in the Stansbury Mountains near the southwestern portion of the valley, to 4200 feet m.s.l. near the shores of the Great Salt Lake. Elevations on the valley floor average 4700 feet m s l

Surface drainage is generally downward from the mountains to the valley floor and then northerly toward the Great Salt Lake

3.2.3.2 Climate

Tooele Valley is characterized by hot, dry summers, cool springs and falls; moderately cold winters, and a general year-round lack of precipitation. The higher elevations of the adjacent mountains experience greater amounts of precipitation and somewhat cooler temperatures.

Most precipitation occurs as snow between early fall and late spring, when the valley is affected by the continental winter storm track. Summers are generally dry, but showers and thunderstorms do occur occasionally. The largest amount of precipitation occurs in the mountains, creating a potential for flash floods and erosion. Grantsville, approximately 2 miles northwest of TEAD-N, receives an average annual precipitation of 11.0 inches; Tooele receives an average of 16.5 inches.

Low humidity is a characteristic of the valley climate, and visibility is generally good. During winter months, however, storm fronts are usually followed by high-pressure fronts that occasionally last for several weeks. These fronts trap the cold air in the valley, creating temperature inversions that can create significant fog and smog problems.

The Salt Lake Basin forms a large, generally enclosed air basin of 7,500 square miles. The Great Salt Lake is a shallow body of water covering approximately 2,000 square miles--an area large enough to drive a classical sea-breeze circulation. The sea-breeze circulation moving through the air basin is called the local wind circulation (LWC). The LWC is caused by the uneven heating and cooling of the land and water surfaces. This diurnal wind tends to blow downslope toward the lake at night, when the lake is warmer than the land. During the daytime, when the land is warmer than the lake, the winds flow upslope into the valleys and mountains. This tends to cause a mixing of air in the center of the lake along a north-south axis during the day. The LWC is the predominant wind factor in the basin, and winds rarely exceed 10 MPH, although passing storms cause higher wind velocities. The LWC produces a constant interchange of air in the basin but only limited exchange with air external to the basin.

The average annual temperature ranges from a high of 80 °F to a low of 30 °F. The highest recorded temperature during the 1965-75 period was 110 °F, while the lowest for the same period was 14 °F. The average spring and fall frost dates are 1 April and 25 October, respectively.

3.2.3.3 Soils

Soils in Tooele Valley are of the major soil group Pedocal, which consists of soils that occur where rainfall is less than 25 inches annually and that contain an excess of calcium carbonate (limestone). Calcification occurs where evaporation normally exceeds precipitation and rainfall is insufficient to leach the soils. Lime and other bases are then restored to either the surface or the subsoils by vegetative and capillary actions. This is a common occurrence in the grasslands of steppes and semideserts.

3.2.3.4 Water Resources

Tooele Valley is part of a 4,000-square-mile drainage basin that includes portions of the Stansbury, Oquirrh, and South Mountains. The Great Salt Lake forms the northern boundary of the basin.

There are no large surface water bodies in Tooele Valley. Smaller surface water bodies include several small reservoirs and five perennial streams flowing from the adjacent mountains. Water from these streams is usually diverted for irrigation upon leaving the mountainous areas, but during rare periods of high runoff, water flows into the valley in natural stream courses.

The National Wetlands Inventory mapping done by the USFWS (based on September 1981 aerial photography) shows numerous wetlands scattered across the installation. Two or three palustrine (marshy) wetlands are

located within the same general area in which construction of the new facility on TEAD would occur. During discussions with personnel from the installation, it was revealed that these wetlands are associated with two sewage lagoons. It is not known at this time if these wetlands meet the definition of jurisdictional wetlands as defined in the Federal Manual for Identifying and Delineating Wetlands, dated January 1989.

Ground water exists in the consolidated rocks of the mountains and in the unconsolidated valley fill. Both unconfined (water table) and confined (artesian) aquifers are found in the unconsolidated valley fill. Fresh water is found at varying depths throughout the valley, the greatest depths occur in the southern portions of the valley and near the mountains. Although there are several deep wells (200 to 630 feet) in the valley, approximately 65 percent of the existing wells have static water levels of 50 feet or less.

The major source of recharge to the valley aquifers is precipitation falling on the adjacent mountains, a portion of which migrates downward to the valley fill. Other recharge sources include limited precipitation falling on the valley floor, springs, irrigation, seepage from stream channels and mines, and subsurface flow from Rush Valley.

Wells, springs, and evapotranspiration provide the major sources of discharge. Ground water flows toward the center of the valley and then northerly, discharging a small amount of ground water into the Great Salt Lake.

The ground water quantity increased slightly between 1963 and 1978 in Tooele Valley, probably because of an increase in precipitation and mine drainage. This increase is thought to be temporary, however, and some decrease is projected for the future. The amount of decrease will depend on the ratio of discharge to recharge. Development of new wells

within Tooele Valley is restricted by the State of Utah. Except for special variances, new wells are limited to residential use at the rate of 0.015 cubic feet per second, or 7 gallons per minute.

3.2.3.5 Noise

The noise environment of Tooele Valley in the vicinity of TEAD-N is influenced primarily by activities associated with certain types of land use. The important use categories in terms of noise are open-space areas (agricultural and grazing land), built-up areas (Grantsville and Tooele), and transportation networks (highways, rail lines, and airports).

The noise environment of the open-space areas (which predominate in the valley) is quiet, with an average noise level of less than 40 dBA. The open-space areas include the areas surrounding TEAD-N to the south, west, and north (with the exception of the northeast portion which abuts Tooele). Except for occasional vehicular traffic along State Route 59 (west side of TEAD-N) and aircraft overflight, there are no permanent noise sources in these areas. The open-space area east of TEAD-N and State Route 36 is also quiet but is influenced by vehicular and rail traffic along State Route 36 and the Union Pacific Railroad line.

Grantsville (approximately 2 miles north of TEAD-N) and Tooele (adjacent to the northeast portion of TEAD-N) have noise environments characterized by various types of human activity. The primary noise influence is vehicular traffic along local streets. The typical noise level generated by individual automobiles on neighborhood streets ranges from 56 to 65 dBA 50 feet from the source. Other typical human activities generate a noise level at 65 dBA or less. With little human activity in a residential neighborhood, the average noise level could drop to near that of undeveloped areas (36 to 40 dBA). The noise level in business

areas is more heavily influenced by frequent vehicular traffic and is higher on the average than the level in residential neighborhoods

There are many events in an urban setting which can increase the noise environment above the norm for relatively short periods of time. Automobiles with defective mufflers generate a high noise level. Heavy trucks traveling less than 35 MPH generate a noise level as high as 80 to 82 dBA. Rapid acceleration of trucks generates a noise level above 90 dBA. Construction activity also typically generates a high noise level.

Aircraft traffic at Tooele Municipal Airport and Tooele Valley Airport is not a significant source of noise in the area. No jet aircraft are presently operating out of either facility, and the existing traffic is of relatively low volume. The noise impacts of aircraft operations can be broken into four major activity phases: taxi, runup and takeoff, cruise, and landing. Of these operations, takeoff is the most noise intensive. The typical noise level of multiengine propeller aircraft during takeoff ranges between 79 and 92 dBA 1,000 feet from the source. The average cruise noise level ranges from 63 to 68 dBA 1,000 feet above ground, and the average landing noise level is between 70 and 80 dBA 1,000 feet from the source.

Vehicular traffic along State Routes 112 and 36 consists of automobiles and trucks. These sources affect the noise environment along the path of the right-of-way, resulting in momentary intrusions as vehicles pass by the observer. As the number of vehicles increases over a given period of time, there will be a rise in the average noise levels of the area along the right-of-way. The typical noise level generated by automobiles on highways at 50 MPH ranges from 64 to 80 dBA 50 feet from the source. Truck traffic at 50 MPH generates a noise level ranging from 70 to 95 dBA. Because of the relatively low volumes of traffic along

State Route 36 south of Tooele and along State Route 112, the overall noise level along these routes is relatively low

Noise generated by railroad operations is limited to the right-of-way along the eastern boundary and at the northeast corner of TEAD-N and along the western limits of Tooele. Because both the Union Pacific Railroad and the Western Pacific Railroad generate low volumes of rail traffic along their respective route segments, the impact on the overall noise level is not significant. In other words, the noise impact is relatively infrequent and of short duration. The typical noise level generated by freight trains ranges from 88 dBA (diesel electric locomotive) to 80 dBA (freight cars) 50 feet from the source

3.2.3.6 Air Quality

Tooele County, within which TEAD is located, is in compliance with the National Ambient Air Quality Standards for all parameters except sulfur dioxide. The violation of the sulfur dioxide standard is for air quality above 6,500 feet and is based on dispersion model estimates, not on monitoring. The sulfur dioxide problem is related to copper smelting that occurs in Tooele County, it is not related to activities at TEAD. An air quality monitor was operated at TEAD from May 1972 to December 1981. It was discontinued because the air was found to be in attainment of the National Ambient Air Quality Standards (telephone communication, Utah Department of Health, August 1990).

Air pollutants at TEAD include emissions, from military equipment rebuild/maintenance operations (primarily volatile organic compounds, chlorinated solvents, and internal combustion products), boilers, and OB/OD activities. Emission products resulting from open detonation of commonly used explosives in ammunition are shown in table 3-4. Until March 1989, an APE furnace was operated at the depot for demilitarization

purposes. The furnace was shut down at that time for modifications. Modifications included an afterburner and baghouse and were made to allow for the processing of both class A and class B explosives as well as class C explosives (telephone communication, environmental staff, TEAD, October 1990). The modified furnace has been evaluated by the Utah Department of Health and was found to be consistent with State air regulations (letter from Utah Department of Health to TEAD, 6 November 1989).

3.2.4 Biological Resources

The following descriptions of the flora and fauna at TEAD are largely taken from USATHAMA, Tooele Army Depot, Preliminary Assessment/Site Investigation, Final Draft Report, Volume I, North Area and Facilities at Hill Air Force Base, February 1988

3.2.4 1 Flora

Climate has had a profound influence on the flora of Tooele Valley. Drought conditions are especially critical to plant growth and reproduction. The lack of precipitation, low humidity, and light winds have forced plants to adapt to a very high rate of evapotranspiration.

Temperature is also a critical factor in the growth and reproduction of plants in the area. The first killing frost is 25 October and the last is 1 April on the average. Most plants in the area are either dormant (perennials) or in seed form (annuals). The heat of the summer causes many of the plants to enter another period of dormancy. These climatic conditions limit the periods of growth and reproduction to the cooler, wetter periods between 1 April and 25 October, unless the plants are adapted as are phreatophytes, which tap ground water.

Soils are a significant determinant of flora in the area. Some of the soils are nearly impervious to water and root action. Other soils lack sufficient nutrients to support much plant life. Soils may also have a limiting pH; most of the area's soils are alkaline. In addition, saline soils exist in numerous areas. Many plants have adapted to these conditions, as well as to low soil moisture, lack of humus, high mineral iron content, and varying soil depths and types, but these factors also tend to limit the number of plants.

Soil types often determine erosion. Erosion and vegetation in the area have a cyclic cause-and-effect relationship. Erosion begins when the vegetation is destroyed, as happened during the Grantsville Dust Bowl. Erosion removed the soil and kept the plants from reintroducing. The flora changed as new species out-competed the old ones on the partially eroded areas. The highly eroded areas were fenced and reseeded.

Topography also influences flora. Some species have developed preferences for either slopes or flat areas. In addition, the amount and speed of runoff, which are largely determined by topography, are critical biological factors.

TEAD-N is in the area classified as an Artemisia Biome, which is characterized by sagebrush (*Artemisia*) and saltbrush. This general classification is broken down into smaller areas based on predominant vegetation types and soil ranges.

The Desert Bench Range has medium surface soil and slowly permeable subsoil. The dominant vegetation is winterfat, budsage, Indian ricegrass, and western wheatgrass. There are low areas within this range that support greasewood, shadscale, and gray Molly. In areas where puddling occurs after a heavy rainfall, greasewood and inkweed are dominant.

The Sandy Hills Range has two soil type areas. The first and most westerly soil type has moderately light surface soil texture and rapidly permeable subsoil. The dominant plants are juniper, low sagebrush, big sagebrush, ephedra, Indian ricegrass, sand dropseed, shadscale, and needleandthread grass. The second and central soil type also has moderately light surface soil texture and rapidly permeable subsoil. Dominant vegetation consists of juniper, big sagebrush, ephedra, sand dropseed, and Indian ricegrass. In areas not covered by juniper trees, the dominant vegetation is big sagebrush, rubber rabbitbrush, bluebunch wheatgrass, Indian ricegrass, and sand dropseed. The lower parts of both soil type areas have big sagebrush, greasewood, gray Molly, shadscale, and horsebrush.

The Foothill Range has three soil type areas. The first is in the eastern part of the range and has a gravelly surface condition consisting of gravel and cobble mixed with medium-textured soil material. The dominant vegetation is spiked wheatgrass, nature blue, needleandthread grass, western wheatgrass, Indian ricegrass, sweet vetch, balsam root, and yarrow. This area is being invaded by low sagebrush and big sagebrush. To the southeast, the soil type has a medium texture and moderately permeable subsoil. The dominant vegetation for this area is the same as for the soil type area above. The southeast portion of the Foothill Range is also being invaded by halogeton and cheatgrass. The third soil type area is in the south and southwest areas of the range. The soil type is gravelly or cobbly without medium-textured soil. The dominant vegetation is the same as for the two soil type areas described above. There are also pockets of sagebrush and shadscale.

The Upland Loam Range has two soil type areas. The first, toward the southwest corner of TEAD-N, has a medium-surface soil texture and slowly permeable subsoil. The second, near the south boundary of TEAD-N, has moderately textured surface soil with moderately permeable subsoil. In

both areas, the dominant plants are cheatgrass, Indian ricegrass, snakeweed, and fescue; also present are big sagebrush, bitter vetch, yellow brush, lupine, rabbitbrush, and paintbrush.

There are no known threatened or endangered species of plants at TEAD-N.

3.2.4.2 Fauna

The condensed growth and reproduction of the plant communities in Tooele Valley limit the ecological niches available to animal species. The competition for food sources is severe during the hot, dry summer and winter dormancy periods, and the animals have had to adapt to the same climatic conditions. They have adapted as hibernators, estivators, diurnals, or nocturnals or have physiological adaptations that enable them to survive drought and heat or snow and cold.

The TEAD-N vicinity is inhabited by a wide variety of animal species. These species range from protozoans to mammals and include 20 species of parasitic flatworms; 79 species of free-living, soil-inhabiting, or parasitic roundworms; 36 species of slugs and snails, 150 species of mites, ticks, spiders, pseudoscorpions, solpugids, and scorpions; 1,300 (and probably many more) species of insects, 1 species of amphibians, 6 species of lizards, 2 species of snakes, 69 species of migrant birds, 11 species of winter resident birds, 71 species of summer resident birds, 63 species of birds in permanent residence, and 40 species of animals.

Several species of game animals exist in the TEAD-N vicinity. Mule deer, mountain cottontail, and desert cottontail inhabit the area. Furbearing animals include coyote and bobcat. Game birds include sage grouse, Gambel's quail, sharp-tailed grouse, blue grouse, ruffed grouse, and the imported ring-necked pheasant and chukar. In addition to the

local game birds, there are 37 species of migratory waterfowl that use the flyways through TEAD-N

Several species of animals have been eliminated from the area. These species include bison, grizzly bear, elk, black bear, pronghorn antelope, and mountain sheep. The mountain sheep, pronghorn antelope, and elk have been or are being reintroduced, mainly in the mountains

Offpost hunting is permitted for all 57 game species (in season), and population control is largely due to hunter pressure

Two threatened and endangered species are known to be in the vicinity of TEAD-N--the bald eagle and the peregrine falcon. The bald eagle habitat in the area is considered to be important habitat. This important habitat encompasses an extensive area in Utah which includes TEAD-N. Peregrine falcons have been sighted at TEAD-N. The range of the peregrine falcon's habitat has been shrinking because of housing and agriculture pressure, and the peregrine's prey is also being depleted.

3.2.5 Cultural Resources

3.2.5.1 General

Currently available evidence indicates that the eastern Great Basin has been the scene of human activity for at least the past 10,000 years. The intervening span of time to the historic period is evidenced by a sequence of artifact assemblages representing either different cultures or cultural adaptations to the region. A plethora of period and phase names, along with slight variations in their respective temporal limits, has been applied to these cultural/chronological divisions

Both the Ute and the Shoshoni are thought to have entered their ethnographic territories during the protohistoric period as a part of the Numic expansion into the Great Basin. Although the reconstruction of ethnographic boundaries is inherently imprecise, the available data suggest that TEAD-N fell within traditional Gosiute territory. As with most Great Basin bands, this group pursued a settlement-subsistence strategy based on seasonal occupation of particular resource collection locales.

Although Spanish explorers first entered eastern Utah in the mid-1770's, and both trappers and traders passed through the area during the early decades of the 19th century, it was not until Brigham Young led the Mormon pioneers into the Salt Lake Valley in 1847 that Anglo-Europeans began to exert a strong influence on the region. By 1849, however, Mormon expansion into the Tooele area had already resulted in conflict with the resident Gosiute. Early historic period land uses in the region primarily involved transportation corridors, irrigation/water supply systems, mining, farming, and ranching. In fact, when development of TEAD-N began in 1942, grazing was the principal land use of the area within TEAD.

3.2.5.2 Prehistoric Resources

Although TEAD-N has not been systematically surveyed for cultural resources, two prehistoric cultural resources are known to exist at the installation. These include a petroglyph site and a village complex, the latter of which was partially excavated in the 1930's.

BRAC-related new construction at TEAD-N will be limited to an area of approximately 20 acres. An archeological survey by USACE Sacramento District personnel in November 1989 showed that this area of proposed construction has been heavily disturbed by past grading activities. No

evidence of either prehistoric or historic period cultural resources was encountered.

3.2.5.3 Historic Resources

In 1984, an evaluation was made of the 1,459 then-existing structures at TEAD-N. That effort, which included HABS/HAER recordation of a representative sample, resulted in the recommendation that none of the TEAD-N structures were individually or collectively eligible for the NRHP. This determination was considered provisional, however, because it appeared that neither the Utah SHPO nor the National Park Service had been consulted regarding the eligibility of most of these structures for the NRHP.

Proposed BRAC-related actions at TEAD-N will involve the renovation of five existing structures. A literature review indicated that these structures are World War II era structures. Therefore, architectural evaluations and effect determinations were conducted for these structures in September 1990 by personnel from the USACE Fort Worth District. It was determined that none of the five structures were eligible for inclusion on the NRHP and that the proposed BRAC-related renovations would have no effect on NRHP eligible or listed properties.

3.2.6 Socioeconomic Resources

3.2.6.1 Population

The region of influence that may be expected to experience socioeconomic effects induced by the realignment actions at TEAD are Davis, Salt Lake, Tooele, and Utah Counties, Utah. This region encompasses 9,993 square miles. Because two-thirds of the current

employees at TEAD reside in Tooele County, that county is the primary area affected Tooele County encompasses 6,919 square miles

The regional population, according to the 1980 census, was a little over 1 million. The estimated 1989 regional population was 1.19 million. Between 1980 and 1989, the regional population increased by an estimated 17.4 percent. The 1994 projected regional population is 1.25 million, an increase of about 5 percent over the estimated 1989 population.

Tooele County's population, according to the 1980 census, was 26,033. The estimated 1989 population was 28,857. The 1994 projected population is 28,651, a 1-percent decrease from the estimated 1989 population.

According to the March 1990 DA Execution Plan, TEAD's total labor force of 3,673 persons consisted of 52 military personnel and 3,621 civilian personnel.

3.2.6.2 Employment

The 1988 civilian labor force in the four-county region of influence was 539,604. In 1986, the services sector employed 27.1 percent of the total employed labor; the retail trade and government sectors employed 16 and 19 percent, respectively. An estimated 0.6 percent of the total civilian labor force in the region is employed at TEAD (BEA, 1988). In Tooele County, the 1989 civilian labor force was 11,440. In 1986, the retail trade section employed 11.25 percent of the total employed labor. The services and manufacturing sectors employed 5.7 and 5.5 percent, respectively. An estimated 32.1 percent of the total labor force in Tooele County is employed at TEAD.

The 1989 unemployment rates are presented in table 3-8.

Table 3-8
1989 Unemployment Rates

<u>Region</u>	<u>Percent Unemployment</u>
Tooele County	4 6
Four-County Region	4 3
State of Utah	4 7
United States	5 3

Source. Construction Engineering Research Laboratory, January 1991,
Economic Impact Forecast System II

3 2.6.3 Income

Personal income for the four-county region in 1988 was \$14.6 billion, an increase from approximately \$8.2 billion in 1980. Estimated per capita income for 1989 was \$10,263. This compares to the 1989 estimated per capita income of \$11,045 for Tooele County, \$9,920 for the State of Utah, and \$13,218 for the United States. The 1994 four-county region per capita income is projected to be \$12,089. The 1994 projected per capita income for Tooele County, the State of Utah, and the United States is \$13,445, \$11,693, and \$16,669, respectively. Average household income in 1989 for the four-county region is estimated at \$32,938. This compares to 1989 estimates of \$36,663 for Tooele County, \$31,851 for the State, and \$35,205 for the Nation. Total regional sales in 1982 were \$13.5 billion (Bureau of the Census, 1982). Total government revenue in 1982 was \$1.257 billion, and expenditures were \$1.457 billion.

3.2.6.4 Housing

According to the 1980 census, there were 326,570 year-round housing units in the four-county region of influence. Of this total, 65 percent were owner occupied and 29 percent were renter occupied. The vacancy rate

was 6 percent. The mean value of an owner-occupied home was \$68,400. The four-county region had 308,217 households in 1980 and an estimated 366,977 households in 1989. In 1994, 390,550 households are projected for the region. Tooele County alone had 7,966 households in 1980 and an estimated 8,604 households in 1989; 8,463 households are projected for 1994.

The average monthly rent paid by military personnel for offpost housing is \$425 for officers and \$375 for enlisted personnel.

3.2.6.5 Schools

Dependents of TEAD personnel attend school in Davis, Salt Lake, Tooele, and Utah Counties. Public schools in these four counties had a total enrollment of 279,000 during the 1988-89 school year. School districts in these counties operated 334 schools at that time. The highest concentration of dependents is believed to be in Tooele County. That county had approximately 7,500 students and operated 15 schools during the 1988-89 school year.

3.2.6.6 Transportation

- **Highways.** TEAD is normally accessed by automobile and truck. Interstate Highway 80 (I-80) is the primary highway providing access to the Tooele area. It runs in an east-west direction. TEAD is linked to I-80 via State Route 36, which is the main north-south highway in Tooele County. I-80 had an ADT count of 20,725 in 1989 at a point east of the Tooele interchange. State Route 36 recorded an ADT of 20,210 the same year at its intersection with Vine Street in the city of Tooele (telephone communication, Utah Department of Transportation, August 1990). TEAD is served on a daily basis by trucking companies in Tooele and Salt Lake City.

- Rail Rail service is provided to TEAD by the Union Pacific and Western Pacific Railroads TEAD is accessed by a branch line extending southward from the Western Pacific main line at Burmester to Tooele and TEAD.

- Air. Several airports serve Tooele County None, however, have scheduled commercial air passenger and cargo service The closest airport with these services is Salt Lake City International Airport, located approximately 30 miles east of TEAD

3.2 6 7 Utilities

3.2 6.7 1 Tooele Army Depot

- Water Supply Water for potable and nonpotable uses at TEAD is supplied from an alluvial-fan aquifer. The depot operates and maintains its own water storage and distribution system During 1981, water use at TEAD-N was 325 3 million gallons Approximately 17 percent of this amount was used for domestic purposes. The remaining 83 percent was used for industrial purposes

- Sewage Treatment Domestic sewage treatment at TEAD-N is provided by two sewage treatment lagoons and septic tanks with drain fields. The sewage treatment lagoons treat and dispose of domestic wastewater. Each lagoon has a surface area of 8 acres. Although the lagoons are interconnected, only one is normally used The amount of sewage treated varies, but, generally, average daily flows are 90,000 gallons. The treated effluent is disposed of by evaporation and percolation. Septic tanks with drain fields are used for domestic waste in isolated areas. A new industrial wastewater treatment plant came online in 1988. The plant is designed to remove organic solvents, heavy metals, grease, and oil. It has a design capacity of 160,000 gallons per day. Current

inflows vary from 80,000 to 100,000 gallons per day (telephone communication, facility engineering, TEAD, October 1990.)

- **Energy.** Electrical energy is provided to TEAD by the Utah Power and Light Company in Salt Lake City. TEAD-N is furnished 44 kV from a substation in Tooele. Power substations 1 and 2 at TEAD-N are fed by 12,000 kVA lines. The combined capacity of these two substations is 7,750 kVA for normal use and 10,322 kVA for maximum use.

Monthly peak demand and consumption figures for electricity usage are available for 1978 through 1980. These figures include both TEAD-N and TEAD-S. The monthly peak demand during this period was 5,680 kVA. This figure is well within the capability of the two TEAD-N substations. Electrical consumption decreased slightly during this period, with approximately 224,000 kWh used in 1980.

Heating at TEAD is provided primarily by fuel oil. The oil is shipped by truck to six central heating plants at TEAD-N. In 1980, 1,755,000 gallons of fuel oil were used at TEAD-N.

3.2.6.7.2 Area Communities

Two cities in the TEAD area were determined likely to be affected by population changes due to realignment: Tooele, which is located adjacent to the east side of TEAD, and Salt Lake City, located in Salt Lake County approximately 20 miles to the northeast of TEAD. The 1980 population of Tooele and Salt Lake County was 14,335 and 619,066, respectively (U.S. Department of Commerce, Bureau of Census, 1980 Census of Population and Housing, 1981).

- **Water Supply** Tooele obtains raw water from a collection system of 3 springs and 10 wells. The springs provide adequate water for winter

use. Occasional problems result from dewatering the springs during dry summer months which coincide with peak periods. The problems have not been sufficiently serious to require water restrictions or rationing. Water treatment consists of minor chlorination (telephone communication with city engineer, City of Tooele, August 1990)

Numerous entities in Salt Lake County provide water. An investigation of the capacity for all entities potentially affected would be beyond the scope of the EIS. A USACE study on the Little Dell Creek project found that additional water supply is urgently needed in the Salt Lake City area by the year 1990 (Little Dell Lake, Utah Reexamination Study, February 1984, Sacramento District, Corps of Engineers). The largest water provider in the metropolitan area is the Metropolitan Water District (MWD). The MWD serves approximately 70,000 people and delivers water to an estimated 50 percent of the metropolitan area population. During the 3-year period including 1987, 1988, and 1989, it provided an average of 52 MGD to its customers. Until recently, the MWD had a peak plant capacity of 113 MGD. This capacity was greatly increased with the expansion of the Jordan Valley Treatment Plant from 75 to 180 MGD. This project was a joint venture and is not wholly owned by MWD (telephone communication with engineer, MWD, August 1990).

- **Sewage Treatment** Tooele operates a secondary sewage treatment plant with a design capacity of 2.3 MGD. The plant currently handles slightly less than 1.0 MGD. Effluent is applied to land for irrigation purposes and there is no discharge into a watercourse. Tooele is currently meeting all water quality standards for sewage treatment (telephone communication with city engineer, city of Tooele, August 1990).

Wastewater treatment in the Salt Lake City area is primarily the responsibility of city government. There are numerous entities providing this service. For the purposes of this analysis, Salt Lake City is

considered to provide an indication of the potential impacts which are possible because of an increased population

Salt Lake City operates a secondary sewage treatment plant with a design capacity of 50 MGD. Waste loads of 38 MGD are normal. Effluent is discharged into a canal which, in turn, discharges into the Great Salt Lake. There is no problem meeting the requirements of the NPDES permit, and the city has received several national awards for the quality performance of its operation (telephone communication with staff, Salt Lake City, August 1990).

3.2.7 Hazardous and Toxic Wastes, Installation Restoration Program

A PA/SI was performed by the Army in 1988 under the IRP for TEAD-N. Under section 211 of SARA and section 120 of CERCLA, the investigation and remediation of possible releases of hazardous substances or contaminants at TEAD is being addressed as part of the IRP. The objective of the IRP is to identify and eliminate or control the migration of contamination resulting from past operations throughout the Army. The IRP consists of three phases, as previously discussed: the PA/SI, RI/FS, and RD/RA.

TEAD-N has been placed on EPA's NPL for uncontrolled past waste releases. The results of the PA/SI performed as part of the IRP indicated hazardous waste releases at sites which may pose a risk to the public and the environment. If so, these sites may warrant remedial action. These results were used by EPA in determining the relative hazard of the site(s) for placement on the NPL, as required by CERCLA. TEAD will enter into an interagency agreement with EPA and State regulatory agencies for the planned removal and remediation of identified source areas.

The PA consisted of a research and nonintrusive site investigation to characterize site history and configuration. The Site Inspection consisted of sampling soil and ground water to characterize the nature and extent of contamination. The PA/SI defined areas of potential contamination based on record/literature search studies, previous field investigations conducted for selected areas, and visual surveys of the areas.

The areas identified as potential sources of contamination in the PA/SI for TEAD-N are the TNT washout facility area, the former transformer storage area, a PCB spill site, and the OB/OD grounds.

3.2 7.1 TNT Washout Facility Area

The TNT washout facility area is located along East Workshop Road near the south-central boundary of TEAD-N. The area can be divided into four discrete areas: the old TNT washout ponds, the new TNT washout basin, the laundry effluent ponds, and the area of surface contamination.

Soil, ground water, and effluent samples were obtained from each of these areas during the PA/SI. The results of sampling indicate that the old TNT washout ponds were highly contaminated with a variety of explosive compounds. TNT levels exceeded 20,000 $\mu\text{g/g}$ of sediments. The extent of contamination is defined within the area formerly encompassed by ponds Nos. 1 and 2. The potential for future migration of contamination was considered low because the ponds no longer receive rinse water, and they have been filled in and capped.

The new TNT washout basin contained relatively low levels of explosives in the sediments (less than 20 $\mu\text{g/g}$ of TNT) and was not thought to pose a significant risk of contaminant migration from source areas.

The laundry effluent ponds are thought to be a continuing source of contamination to the perched ground water which is localized in the TNT washout area. This perched ground water was found to be contaminated by a variety of explosive compounds, sodium nitrate+nitrate nitrogen compounds, and arsenic in excess of Federal and State drinking water standards.

3.2.7.2 Former Transformer Storage Area and PCB Spill Site

Transformers containing PCB-contaminated oil were stored at TEAD-N until 1979 in an open storage yard located northwest of the maintenance and supply area. In 1979, all transformers were removed from the site for storage at Building 659 or for disposal. The PCB spill site is located in the southern corner of open storage lot No 665D. Two transformers containing a total of 1,000 gallons of PCB-contaminated oil were punctured with a forklift blade during removal operations. The areal extent of oil staining was determined to cover less than one-half acre of ground surface. Saturated soils were excavated, drummed, and properly disposed.

Sampling and analysis of surficial soils at the former transformer storage site and the PCB spill site revealed low levels of PCB Aroclor 1254 and 1260. No composite soil sample contained PCB concentrations greater than 0.19 $\mu\text{g/g}$, and none exceeded the TSCA standard of 50 parts per million (ppm) for PCB-contaminated soils.

3.2.7.3 Open Burning/Open Detonation Area

The OB/OD area is located in the southwest portion of TEAD-N. This area consists of a number of trenches and pits which collectively are referred to as the OB/OD area. The activities conducted at these sites include open burning, open detonation of munitions, and burial. The open detonation pits are used to destroy all types of conventional ammunition,

including propellants and rocket motors. Materiel is placed in pits, covered with soils, and then detonated. An environmental investigation conducted by USAEHA in 1981 revealed significant quantities of RDX and HMX in surficial soil samples.

The propellant burn pad, a cleared area about 2,000 feet east of the open detonation pits, is used for burning propellants and for flashing projectiles. The propellant burn pad covers an area of 27,000 square feet. USAEHA conducted sampling and analysis of soils at seven locations at this site. Low levels of explosives were found in four of the seven samples, with one sample containing 52 $\mu\text{g/g}$ of 2,4,6-TNT.

3.2.7.4 Summary

Further study of all areas detailed in the previous paragraphs is scheduled, including an RI/FS to define the areal extent of contamination at these sites. To be in compliance with regulatory criteria, remediation of sites may be recommended based on the risk to human health and environment from these sites. Some of these sites will be addressed under the Corrective Action portion of a RCRA permit issued to TEAD-N in January 1991. The remaining sites will be covered under CERCLA in the Federal Facility Agreement (FFA) to be negotiated with the State of Utah and EPA.

3.2.8 Hazardous Waste and Material Management Program

3.2.8.1 Hazardous Wastes

The waste management program at TEAD-N may be defined as generating activities, storage, disposal, and treatment associated with specific mission functions.

Waste-generating activities include industrial operations, surveillance testing of ammunition, ammunition demilitarization, and nontactical generator repair and rebuilding. Industrial activities at TEAD-N consist of the care, maintenance, and renovation of combat vehicles and support equipment. Wastes generated by these activities include chromium and cadmium-contaminated waste streams, detergents, grease and oils, and solvents from degreasing operations.

Ammunition demilitarization includes OB/OD of conventional ammunition, the TNT washout facility (has not been used since the late 1960's), and a deactivation, or popping, furnace. Conventional ammunition types burned or detonated include small arms, propellants, rocket motors, cluster bombs, white phosphorus, and bulk explosives. Some types of conventional ammunition, such as projectiles, bombs, and rocket heads containing TNT, RDX, and tritonal products, are demilitarized at the TNT washout facility. Primary waste products from these activities include TNT, DNT, RDX, and HMX.

The hazardous waste storage areas at TEAD-N used to store explosive wastes include the north base area permanent storage area; the DRMO permanent storage area, and magazines C-815, A-101, and 1368. The north base area permanent storage area for hazardous wastes includes Building 528 and a 90-day storage area at Building 585. Wastes stored include spent solvents, oils, sludges, plating wastes, and explosive wastes.

TEAD-N has applied for a RCRA permit for the following hazardous waste-storage, treatment, and disposal facilities: north base area permanent storage area; DRMO permanent storage area, magazines C-815, A-101, and 1368, former service magazines for explosive wastes; OB/OD pits; and a deactivation furnace for small arms ammunition. These hazardous waste management units presently have RCRA interim status, pending issuance of a final RCRA permit. The deactivation furnace is currently

out of compliance for the test burn portion of the permitting requirements, and the permitted status has been revoked, pending design revision, a trial test burn, and modification of the permit application. In late 1990, TEAD-N received a Notice of Violation and Compliance Order from the State of Utah citing 131 violations of hazardous waste requirements. All of these alleged violations have been corrected or have been substantially resolved with the State, pending further studies under RCRA and the FFA

An active sanitary landfill is located west of the TEAD-N industrial/maintenance and supply area. The landfill is unlined and is operated by the trench method. No hazardous wastes are accepted. The waste types placed in the landfill include scrap metal, building debris, asbestos, and general refuse. The landfill is not included under the RCRA interim status permit applications, it operates under State regulatory requirements for sanitary landfill activities.

3.2 8.2 Hazardous and Toxic Materials

Hazardous materials are stored in Buildings 594, 735, 596, and 534 and in Igloo F-510. Building 518 stores pesticides, herbicides, and fertilizers. Building 659 has been designated for storage of radioactive material as well as PCB's and PCB transformers.

Various munitions are stored in the igloo storage area in the central portion of TEAD-N.

PCB transformers are located in various locations on the installation and are currently being surveyed for compliance with TSCA regulations. The compliance management program includes leak-testing, chemical analysis, and replacement or removal. Building 659, the PCB storage area,

is used to containerize and store leaking and damaged transformers and PCB materials that are awaiting commercial disposal

Radioactive materials, used in calibration of equipment, radiography, and static eliminator brushes, also include ship gauges, watches, tritium, and uranium-238. A section of Building 659 has been designated as a radioactive material storage facility.

TEAD-N has 202 underground and aboveground storage tanks. The depot has recently surveyed the tanks, as required by RCRA and State regulations, 40 CFR 280. As a result of the survey, 2 storage tanks are to be closed in place and 200 are scheduled to remain in use

3.3 RED RIVER ARMY DEPOT

Much of the following information concerning RRAD was taken from the Final Environmental Data for the Red River Army Depot, Texas, prepared by the U.S. Army Corps of Engineers, Fort Worth District, March 1990

3.3.1 General

RRAD is located in northeast Texas approximately 18 miles west of Texarkana. The installation is within the Texarkana, Arkansas, metropolitan statistical area (MSA). The communities of Hooks, located just northeast of RRAD; New Boston, located just west of RRAD, and DeKalb, located 16 miles west of RRAD, are the result of the construction of RRAD and the Lone Star Army Ammunition Plant (LSAAP), a Government-owned and contractor-operated installation located just east of RRAD and occupying some 20,700 acres. Native Americans were the first to occupy the region some 12,000 years ago. These people were followed by the Spanish and French and finally the Euro-American immigration in the early 1800's. Commercial cotton production was introduced in the 1830's. The breakdown

of the plantation system following the Civil War led to a more diverse agricultural economy with tenant and sharecropper farming. With the expansion of the railroads after the war, lumbering became an important industry. Farming and lumbering continued to dominate the local economy at the time the RRAD area was purchased by the Government in 1941.

Construction of RRAD, which currently includes approximately 19,100 acres of gently rolling, forested Texas farmland, was completed in 1942. Construction of an ammunition reserve storage depot, as it was then planned, had been approved in 1941. In time, the RRAD mission was expanded to include many aspects of ordnance testing, training, and vehicular ordnance rebuilding and repair. RRAD was designated as an area oriented depot (AOD) in 1974. With this designation, RRAD became responsible for supplying general supplies to all Army units in an 18-State area of the central United States, in South America, and in Canada. An intensive facilities modernization program was started in 1980; this program included a light track vehicle overhaul facility, a new rubber operations facility, and a new steam boiler plant. In 1984, RRAD became the only depot to have major missions in the three areas of supply, maintenance, and ammunition. RRAD personnel also support the overhaul mission of the Bradley Fighting Vehicle System, which includes the shipping of spare parts as well as depot-level maintenance and Chemical Agent Resistant Coating painting of the vehicles.

There are approximately 1,400 buildings on the depot with a total of 7.2 million square feet of building area. The majority of depot operations are located in a 1,500-acre site in the northeast corner of the installation. Ammunition storage accounts for about 70 percent of the installation's land area; the remaining land is devoted to recreation, training, and forest.

3.3.2 Current Mission

RRAD's current mission is to operate an AOD for the receipt, storage, issue, maintenance, and disposal of assigned commodities; to provide installation support to tenant activities; and to operate other facilities as they are assigned. Primary functions include the receipt, storage, and issue of general supplies and ammunition, the rebuilding and modification of vehicles, ammunition maintenance; the overhaul of aircraft armament systems; and missile systems maintenance. Maintenance, one of the three major missions at RRAD, includes the overhaul, modification, and fabrication of a multitude of Army items. The supply mission, another major mission, consists of supplying more than half the active Army. The third major mission, ammunition, consists of a supply mission and a maintenance mission; various missile systems are assembled, rebuilt and repaired, and/or stored and issued

RRAD also provides space for five tenants. The AMC Intern Training Center is an education institution established to train civilians in the design, management, and production of systems and equipment within specific areas of specialization. The DRMO receives, sorts, classifies, and stores excess and scrap property turned in by depot operations and other sources. The Mobile Rail Shop No. 2 supports special equipment for the Strategic Air Command and Military Traffic Management Command. The U.S. Army Health Clinic provides outpatient medical services for military personnel and their dependents as well as emergency care and followup treatment for civilian employees injured in the line of duty. The U.S. Army Information Command provides communication facilities to RRAD and LSAAP.

3 3 3 Physical Environment

3.3 3.1 Physiography

RRAD is located in the West Gulf Coastal Plain on flat to slightly rolling terrain, varying from elevation 270 to 408 feet m.s.l., which drains from west to east and north to south. The geologic strata of the Red River area consist of clay, sandy clay, siltstone, and sand deposited during the Upper Cretaceous, Eocene, and Pleistocene periods. Exposures of Midway and Wilcox Groups predominate in Bowie County. The Midway Group is characterized by gray to yellowish gray silty clay under gently rolling terrain. The Wilcox Group has buff to gray carbonaceous sands, silts, and clays and overlies sloping topography. There are no known minerals, gem stones, or unusual landforms.

Elevations in Bowie County range from about 460 feet m.s.l. in the west-central part to about 200 feet m.s.l. in the southeastern part.

Because the installation is geographically situated on a divide of two different watersheds, the only flooding that occurs is during extremely heavy rainfall and then only for short periods of time on the creeks. Flooding has not caused any damage to materials or facilities at the installation.

3.3.3.2 Climate

The climate at RRAD ranges between the subtropical humid climate prevalent farther south and the continental climate of the Great Plains and Midwest. The winter months are normally mild, while the summer months are consistently warm. Humidity is high throughout the year, ranging from 50 percent in the predawn hours to 60 percent in the afternoon.

Rainfall is abundant, with a normal annual total near 45 inches. The heaviest rainfall occurs in association with frontal systems as they pass through during the winter months. Snowfall is rare, with an average of only 1 to 2 inches per year. Prevailing winds are out of the south during all months except September, when they prevail from the east. Severe local storms, including hailstorms and tornados, are most frequent in the spring, with a secondary peak from late November through early January. A tornado moved across RRAD in March of 1983, however, only minor roof damage to three buildings and a temporary power outage occurred. Hurricanes have usually dissipated by the time they reach the RRAD area, therefore, the greatest damage is caused by heavy rainfall rather than winds.

The winters are mild; freezing temperatures occur only an average of 35 days a year. The first hard frost normally occurs in mid-November, and the last killing frost usually occurs in mid-March. Subtropical vegetation can be maintained with minimal protection during these cold months. The summer months are hot and humid, with temperatures exceeding 90 °F an average of 89 days a year.

3.3.3.3 Soils

RRAD has three major soil associations within its boundaries.

- **Sawyer-Eylau-Woodtell Association** These gently sloping soils on uplands are moderately well-drained, slowly permeable loamy soils. These soils are found along the southern side of the installation.

- **Annona-Alusa Association.** These nearly level soils on uplands are generally poorly drained, very slowly permeable loamy soils. These soils are the most extensive on the installation and are found on level upland.

areas in the north-central and northeast portions of the installation. The built-up area is underlain by this soil association

- **Sardis-Thenas Association** These soils are deep, poorly to moderately well-drained loamy soils formed in alluvial sediments in flood plains. These soils are found along the principal stream bottoms on RRAD, particularly along Rock, Big, Caney, and Panther Creeks

Almost all of RRAD is underlain by soils that present moderate to severe limitations to building development. The structure of these soils encourages wetness and/or weakness due to shrinking/swelling. The entire Annona-Alusa Association, which underlies the majority of the built-up area, has severe building site development limitations because of its low permeability, corrosiveness, low strength, and shrink/swell potential. These limitations apply to shallow excavations, dwellings without basements, large industrial facilities, small community facilities, and roads. All future development in the built-up area will require special foundation construction.

3.3.3.4 Water Resources

Approximately 500 acres of the depot is covered by water. The vast majority of this water area is part of Caney Creek and Elliott Creek Reservoirs, two manmade reservoirs. In addition to these reservoirs, RRAD has 11 ponds which are important primarily as game watering holes. Although there are four perennial streams on RRAD, none have sufficient flow to be considered suitable habitat for fauna.

Raw water for RRAD is available from the two manmade reservoirs. The primary source is Caney Creek Reservoir in the southeast portion of RRAD. This reservoir is supplied by surface runoff from approximately 10 square miles of drainage area, all within RRAD's boundary. Because the

reservoir is in a restricted area, access to it is extremely limited and it has not been developed for recreational activities. Total capacity of this reservoir is estimated to be about 1,340 acre-feet, or 437 million gallons at spillway level.

An alternate raw water source is Elliott Creek Reservoir; its estimated capacity is 1,930 acre-feet, or 628 million gallons at spillway level. The area surrounding Elliott Creek Reservoir has been used primarily as an outdoor recreation area in recent years, and the reservoir itself has served only as a backup to the Caney Creek Reservoir during periods of extreme drought.

According to the 1987 National Wetlands Inventory mapping done by the USFWS, there are wetlands at several locations on RRAD. The largest ones are around the edges of Caney Creek and Elliott Creek Reservoirs and along major stream courses near the western boundary of the installation.

Only limited information on the aquifers underlying the installation is available. The ground water depth is sporadic and varies from a few feet to 30 to 40 feet. Only one well capable of producing drinking water was known to be on the installation, and it was drilled in 1941 and capped in 1943. It is reported to be several hundred feet deep and to have produced 183 gallons per minute while it was in production. The northern and western portions of the installation lie in a unique area that has no ground water resources and is not a recharge area. Aquifers on the installation range from 200 to 1,400 feet deep.

3.3.3.5 Noise

The noise environment at RRAD is discussed generally as it relates to aircraft operations, explosives detonation, industrial operations, motor vehicle traffic, and railroad activity. The only aircraft

operations are infrequent helicopter flights. Because the helipad is located near the industrial area on RRAD and the number of flights is low, the noise impact is minimal. The only affected areas are those facilities and developed areas immediately beneath flight paths.

USAEHA conducted a noise simulation program (BNOISE) to assess blast noise activity at RRAD. RRAD provided operational data (calendar year 1988) concerning ammunition demilitarization (i.e., weapon description, number of firings, maximum charges, and height of explosion), which were used to generate noise contours. Both noise zones II and III extend off the depot in a sparsely populated, highly agricultural area.

The primary industrial noise source at RRAD emanates from production areas where machinery operations and testing facilities cause problems with environmental noise. Wherever these problem potentials exist, design alterations and noise reduction control measures are taken. Protective ear cover is required in posted noise hazard areas. RRAD conducted an environmental noise survey in 1978. The results of this survey are summarized in table II-12 of the Final Environmental Data for the Red River Army Depot, Texas, 1990.

Noise from road vehicles results primarily from employee automobile traffic, truck traffic serving RRAD, and test vehicles. Automobile traffic noise is generally limited to the rush-hour traffic periods between 6 and 7 a.m. and 4 and 6 p.m. Truck traffic noise fluctuates with the movement of goods in and out of the installation. It has limited impact because of the segregation of traffic into industrial facility areas. Test vehicle noise is generally confined to the test track east of the built-up area and away from noise-sensitive areas. Trucks tested on roads adjacent to civilian communities along the perimeter of the installation have had no significant effect.

Slowly moving freight trains through RRAD provide the potential for an undesirable increase in overall steady-state noise. Train engine noise and wheel squeal both contribute to this potential. However, because primary access to RRAD is via rail spurs entering from the south, the impact on the communities to the north of RRAD is mitigated.

3.3.3.6 Air Quality

Bowie County, in which RRAD is located, is in compliance with the National Ambient Air Quality Standards. The Texas Air Control Board is not currently operating air quality monitors in the county. There are numerous activities at the depot that either do not require air permits (grandfathered or exempt activities) or are operating under permits. These include boilers, paint facilities, fuel storage tanks, and demilitarization and munition disposal activities, and so forth.

RRAD has an OB/OD area which is currently operated under RCRA interim status. A RCRA permit application was submitted to the Texas Water Commission and the Texas Air Control Board in 1988 (telephone communication, environmental section, RRAD, January 1991). The approval of both agencies is required for issuance of the permit. The permit is still pending. The pending permit will include limits on demilitarization.

The depot is preparing a permit application for the operation of an APE furnace. The APE demilitarization furnace has already been modified to meet air quality standards. The permit application is scheduled for completion in 1991. Testing of the furnace will be required as part of the application review process by regulatory agencies before a permit can be issued (telephone communication, environmental section, RRAD, January 1991).

3 3.4 Biological Resources

3.3 4.1 Flora

Bowie County and RRAD contain primarily pine-hardwood forest with some post oak woods, forest, and grassland mosaic in the southwest and native and/or introduced grasses in the west.

RRAD lies within an oak-pine, broadleaf, deciduous and needle green-evergreen forest. Three distinct forest types are common to woodland areas on RRAD: loblolly shortleaf pine, pine-hardwood, and mixed hardwood. The primary climax species found in these woodlands include red maple, black hickory, southern hackberry, persimmon, sweetgum, shortleaf pine, loblolly pine, southern red oak, and post oak. This type of woodland is rather stable and self-duplicating, and minor climatic changes do not affect it. When disturbed, these woodlands regenerate to the same type in time.

- **Loblolly Shortleaf Pine** This forest type occurs on gravel ridges, slopes, and areas that have been cleared, cultivated, or machine planted.
- **Pine-Hardwood.** This forest type occurs on ridges, slopes, and bottom lands cultivated prior to acquisition by RRAD.
- **Mixed Hardwood** This forest type occurs in the undisturbed bottom lands of creeks and drains--in areas not well drained.

Principal shrub and grass species found on RRAD include American beautyberry, hawthorne, sumac, blackberry, tree huckleberry, longleaf uniola, purple top, little bluestem, and broomsedge.

In 1952, approximately 10,000 acres of open fields on RRAD and LSAAP were susceptible to soil erosion. LSAAP is located just east of RRAD. A tree planting program was begun to control erosion and increase timber production. Presently, no tree planting is done on the two installations. The management practice of selective cutting is carried out in a manner to regenerate the stand naturally. The forest land on the installations is divided into seven management compartments, and each compartment is subdivided into 40-acre cutting units. The trees in each cutting unit are inventoried, and specific trees are selected to be cut by private timber companies. Because there is no clearcutting, replanting is not necessary and the trees regenerate naturally. The average rotation cycle for the RRAD timber is 10 to 20 years (the age at which pine species grow to maturity is 60 to 70 years).

A management record system is maintained at RRAD to keep up-to-date records on compartment acreage, inventory, annual work plans, and maps of prescribed burns and harvested areas, as well as records on proceeds from sales.

The forest management program generates almost \$6 for every \$1 spent on it. This profit, after salaries, equipment, and other land management expenses were paid, amounted to \$613,500 in FY 83. The profit is turned over to the U.S. Treasury, which returns 25 percent to Bowie County to help pay for public schools and roads.

Control burning is used to reduce forest litter (to improve fire control), to reduce and remove undesirable vegetation, and to improve the quality of browse for wildlife. The annual objective is to control burn approximately 4,500 acres of undergrowth in different-sized blocks throughout the two installations.

There are two unique vegetation species on RRAD. The Texas State champion post oak tree is located in the Ordnance Training Center (OTC) area, and the champion black cherry tree is located near the training range. Both of these trees are the largest known examples of their respective species growing in the State of Texas.

Texas Parks and Wildlife has indicated that presently there are no known occurrences of sensitive species or natural communities on RRAD. However, in the region around RRAD, four Federal category 2 plant species could occur. goldenwave tickseed (*Coreopsis intermedia*), mohlenbrock's umbrella-sedge (*Cyperus graioides*), southern ladyslipper (*Cypripedium kentuckiensis*), and Texas trillium (*Trillium pusillum* var *texanum*). Table II-2 of the Final Environmental Data for the Red River Army Depot, Texas, 1990, shows the State-listed endangered and threatened species in Bowie County, as well as the degree of likelihood of occurrence.

3.3.4.2 Fauna

There are no unique or endangered habitats on RRAD. Because of the vast size of the installation, however, wildlife is abundant. The principal habitat areas on RRAD include ponds, lakes, streams, and forests. RRAD has 11 ponds, they are important primarily as watering holes. There are four perennial streams on RRAD, none of which have sufficient flow to be considered suitable habitat for fauna. Elliott Creek and Caney Creek Reservoirs are the greatest floral and faunal habitat water resource areas. Although these reservoirs are sometimes high in turbidity, they have sufficient depth and dissolved oxygen to provide for a complex food web to support tertiary-, secondary-, and primary-level consumers.

The forests on RRAD provide more than adequate forage and nesting sites for a wide range of mammals, especially deer. The existing land

management practices of large-stand timber cutting and control burning also encourage successional vegetative growth, which provides for adequate forage. Mammals common or abundant in the area include white-tailed deer, gray squirrel, fox squirrel, raccoon, mink, bobcat, skunk, and armadillo.

A habitat improvement program is ongoing at RRAD. It includes control burning to encourage faunal browse, selected timber clearing, vegetation control in lakes, fish shelters, grain plantings, a predator control program, and browse fertilization.

None of the animals known to exist at RRAD are on State or Federal endangered species lists. Over 400 species of birds have been recorded in the area. Migratory waterfowl traversing the Mississippi Valley migration route are temporary residents. The game birds found on RRAD are mourning doves and bobwhite quail. Fish species on the installation, found in both Caney Creek and Elliott Creek Reservoirs, include largemouth bass, channel catfish, white crappie, black crappie, redear sunfish, bluegill sunfish, black bullhead, yellow bullhead, gizzard shad, and spotted sucker. Some common reptiles on RRAD include the cottonmouth snake, copperhead snake, hognose snake, diamondback rattlesnake, box turtle, and snapping turtle. Some common amphibians include the Texas salamander, treefrog, and bullfrog.

Geo-Marine, Inc., personnel conducted a biological survey in September 1989. The method used to conduct the survey consisted of road tours and periodic ground surveys (once in the morning and once in the evening). A list of species encountered on that survey is presented in table II-1 of the Final Environmental Data for Red River Army Depot, Texas, 1990. RRAD has maintained a comprehensive Fish and Wildlife Management Program since 1967, in consonance with DA and DOD directives. The overall objective of this program is to scientifically manage the installation's natural fish and wildlife resources in coordination with other RRAD land

management programs and related local, State, and Federal land management programs and still be consistent with the military mission of RRAD.

Although no Federal or State-listed threatened or endangered species are known to reside on RRAD, several bird species may migrate through the area. These include the American peregrine falcon (*Falco peregrinus anatum*), arctic peregrine falcon (*Falco peregrinus tundrius*), bald eagle (*Haliaeetus leucocephalus*), interior least tern (*Sterna antillarum athalassos*), and piping plover (*Charadrius melodus*). Recent nesting of the bald eagle has been observed within Bowie County but not near RRAD. The red-cockaded woodpecker (*Picoides borealis*) historically has inhabited the old-growth (60-70 years old and older) pine forest of east Texas, including Bowie County. This bird has not been observed at RRAD, primarily because of the lack of habitat.

3.3.5 Cultural Resources

3.3.5.1 General

Cultural resources at RRAD potentially could date to any period within the 12,000 years of known human occupation in this region. Native American cultures were present during most of this timespan, and the following five general cultural-chronological periods are recognized for the Native American occupation:

Paleo-Indian	10,000 B.C. - 6000 B.C.
Archaic	6000 B.C. - 200 B.C.
Early Ceramic	200 B.C. - A.D. 800
Caddoan	A.D. 800 - A.D. 1650
Historic Native American	A.D. 1650 - A.D. 1835

Previous archeological investigations at RRAD include three separate surveys and test excavations at two sites. In total, 4,153 acres have been surveyed for archeological sites; an additional 5,546 acres have been excluded from survey because of previous disturbance. The surveyed and excluded areas combined account for about 51 percent of the installation acreage. Within this area, 58 archeological sites have been identified as having 68 recognizable components (42 historic components and 26 prehistoric components). One of these sites (the Runnels House site) is a State of Texas Historic Landmark, but it has not yet been evaluated for inclusion on the NRHP. Of the other 57 sites, 35 have been determined ineligible for the NRHP and 22 require additional testing before an eligibility determination can be made. None of these known archeological sites are located within the areas of proposed BRAC-related action.

In 1984, an architectural evaluation was made of the 1,390 then-existing buildings at RRAD, all of which dated from the World War II era or later. That evaluation included HABS/HAER (Level IV) documentation of 30 prototypical examples and resulted in the assessment that none of the buildings at RRAD were eligible for inclusion on the NRHP.

3.3.5.2 Prehistoric Resources

The present prehistoric data base for RRAD is the result of three surveys and limited test excavations at two upland sites. The presently known distribution of prehistoric sites shows a concentration along the larger streams (Caney, Rock, and Big Creeks) and their major tributaries. It is expected that numerous other prehistoric sites will be uncovered as survey work proceeds southward toward the Sulphur River.

Unfortunately, the dating of most of the sites recorded by survey is questionable. No reliable radiocarbon dating of archeological deposits has been done, so all age estimates are based on the presence or absence

of temporally diagnostic artifacts (projectile points and ceramics). Based on this, occupations from the Late Archaic and/or Early Ceramic periods through the Caddoan period can be recognized at RRAD. In addition, finds of a few early-style projectile points at RRAD and at nearby sites suggest a substantial Paleo-Indian use of the area as well.

In terms of site function, most of the prehistoric sites seem to represent short-term or limited-function occupations. This is indicated by the relatively low densities of artifacts and the small site areas. A lack of identifiable features is not unexpected, given the nature of survey data, but the absence of preserved data relating to subsistence practices (animal bones and plant remains) is likely an accurate reflection of the content of these sites.

3 3.5.3 Historic Resources

Forty-two sites with historic components have been recorded at RRAD. Most of the historic sites date to the 1880's and later. While pre-Civil War components are known at four sites, all of the sites contained materials related to the 1860-1880 period. Thirty-three sites have yielded artifacts indicating occupation during the 1880-1940 period.

Many of the historic sites were heavily impacted by the razing of standing buildings that occurred at the time of Government purchase. Most of the historic sites appear to have been house sites or directly related to house sites, representing tenant farmsteads, small-holder farmsteads, and various outbuildings. Several cemeteries dating from the mid-to-late 18th century and early-to-mid 20th century are present as well.

3.3.5.4 Native American Concerns

Native American concerns center around the potential existence of Caddoan burial grounds or ceremonial sites on RRAD. The Caddo Indians were the native occupants of the area who were pushed westward by Anglo-American settlers in the 1840's. Although Caddoan sites are known to be within the RRAD boundaries, none are recognized as ceremonial centers. However, the potential for the presence of burials from the Caddoan period is very good.

3.3.6 Socioeconomic Resources

3.3.6.1 Population

The region of influence that may be expected to experience significant socioeconomic effects from the realignment actions at RRAD are Little River and Miller Counties in Arkansas and Bowie County in Texas. This three-county region encompasses 2,026 square miles.

The regional population, according to the 1980 census, was 127,019. The estimated 1989 regional population is 134,677. Between 1980 and 1989, the regional population increased by an estimated 6 percent. The 1994 regional projected population is 136,674, an increase of about 1.5 percent from the estimated 1989 population.

According to the March 1990 DA Execution Plan, RRAD's total work force of 5,091 persons consisted of 51 military personnel and 5,040 civilian personnel.

3.3 6 2 Employment

The 1988 civilian labor force in the three-county region of influence was 63,062 (BEA, 1988). The services sector employed 22 percent of the total employed labor. The retail trade and government sectors employed 18 and 22 percent, respectively. An estimated 8.1 percent of the total civilian labor force in the region is employed at RRAD. The 1989 unemployment rate in the three-county region was 7.2 percent. This compares to an unemployment rate of 6.7 percent for the State of Texas and an unemployment rate of 5.3 percent for the Nation.

3.3 6.3 Income

In the three-county region, personal income in 1988 was \$1.7 billion, an increase from \$1.0 billion in 1980. Estimated per capita income for 1989 is \$10,431. This compares to the 1989 estimated per capita income of \$12,473 for the State of Texas and \$13,218 for the United States. The 1994 per capita income for the three-county region is projected to be \$12,821. The 1994 projected per capita income for Texas and the Nation is \$15,335 and \$16,669, respectively. Average household income in 1989 for the three-county region, the State of Texas, and the Nation was estimated to be \$22,621, \$34,841, and \$35,205, respectively (BEA, 1988). Total regional sales in 1982 were \$125 billion (Bureau of the Census, 1982). Total government revenue in 1982 was \$110.7 million, and expenditures were \$108.6 million.

3.3.6.4 Housing

According to the 1980 census, the three-county region of influence had 49,937 year-round housing units. Of this total, 66 percent were owner occupied and 25 percent were renter occupied. The vacancy rate was 9 percent. The 1980 census reported 45,660 households in the three-county

region. The 1989 estimate was 50,717 households. The number of households is projected to increase by 3.4 percent to 52,452 households by 1994.

According to the 1980 census, the 1980 mean value of an owner-occupied home in the region was \$34,400. The mean rent was about \$150 per month, with a rental vacancy rate of 10 percent. RRAD has 27 family housing quarters, 6 bachelor enlisted quarters, and 5 bachelor officers' quarters.

3.3.6.5 Schools

The majority of the dependents of installation personnel attend school in Bowie County. The RRAD surrounding area school system includes 30 elementary, 10 junior high, and 10 senior high schools. Over 22,000 students attended these schools during the 1988-89 school year.

3.3.6.6 Transportation

- **Highways.** RRAD is normally accessed by automobile and truck. The main gate and the east gate, both of which are located on the northern edge of RRAD, are the most heavily used access points. U.S. Highway 82 runs adjacent to the north boundary of the installation. The interstate highway system can be accessed via Interstate Highway 30 a short distance north of the base. An ADT rate of 3,400 vehicles was recorded just east of New Boston on U.S. Highway 82 in 1988, and an ADT rate of 5,300 was recorded just west of that city on U.S. Highway 82 in the same year (1988 District 19 Annual Average Daily Traffic Map, Texas Department of Highways and Public Transportation). Most items handled by RRAD are shipped to and from the installation by truck.

- **Rail.** Rail service to RRAD is provided by the Missouri Pacific and Southern Pacific Railroads. Primary access is via rail spurs entering

from the south Rail is used mainly for transporting large items such as vehicles and returned goods

- **Air** The nearest commercial airport, Texarkana Airport, is located 18 miles east of the installation It is served by two major airlines. The closest major airport, Dallas-Fort Worth International Airport, is approximately 170 miles southwest of RRAD. RRAD is directly served by a visual flight rules helipad located on the installation This pad is used approximately 50 times per year

3.3.6.7 Utilities

3 3 6.7 1 Red River Army Depot

- **Water Supply** RRAD maintains and operates its own water supply treatment and distribution system Water is provided for both domestic and industrial purposes The primary source of raw water for the system is Caney Creek Reservoir, which has a maximum storage capacity of 1,340 acre-feet. An alternate raw water source is Elliott Creek Reservoir, which has a maximum storage capacity of 1,930 acre-feet. Both reservoirs are connected to the water treatment plant A potential additional source of water is located at the north RRAD boundary This potential source is a 24-inch Texarkana water utilities main that parallels U S Highway 82.

- **Sewage Treatment** RRAD provides its own sewage treatment. A conventional trickling filter plant is operated for this purpose. The plant has a design capacity of 3 0 MGD The daily average flow, however, is limited by a discharge of 1 5 MGD The plant also provides sewage treatment for LSAAP, which is located east of RRAD The combined effluent from both of these installations resulted in a discharge of approximately 0.5 MGD for the 3 years ending in 1988

• **Energy.** Electricity is supplied to RRAD by the Southwestern Electric Power Company's Bann substation near Leary, Texas. The 69 kV supply line serves LSAAP and the town of Hooks in addition to RRAD. The line parallels U S. Highway 82 along the north boundary of the depot. Two electrical transformers serve the depot and provide a total steady-state power level of 20,000 kVA and peak power of 25,000 kVA. FY 88 electric usage at RRAD was more than 63 million kWh. The peak load was 15,012 kVA.

Natural gas is provided to the depot by the Arkansas-Louisiana Gas Company on an interruptible basis. Small quantities of fuel oil and propane are also used at RRAD. The use of natural gas has been greatly reduced in recent years because of the construction and operation of a coal/wood-fired steam facility. Even with this facility, natural gas provides nearly 20 percent of the energy consumption at RRAD. FY 88 natural gas consumption was 166,920 million cubic feet--one-third of the amount used in FY 84 before the new steam facility came online. Buildings in remote areas not served by natural gas use propane or diesel fuel for heating. Diesel fuel is also used for seven small boilers.

During FY 87, RRAD consumed 815 billion British thermal units (BTU's) of energy. Most of this was provided by coal and wood. These sources constituted 54.1 percent of total energy consumption, with coal and wood providing 46.3 and 7.8 percent, respectively. Electricity provided 24.7 percent and natural gas provided 19.5 percent of the depot's total energy needs. The remaining 1.7 percent of energy used was provided by No. 2 fuel oil and liquefied petroleum (LP) gas.

3.3.6.7.2 Area Communities

Two communities in the RRAD area were determined likely to be affected by population changes due to realignment. These are the city of New

Boston, located just west of RRAD, and the two cities of Texarkana, Texas and Arkansas, located east of RRAD. New Boston and the two Texarkana communities combined had populations of 4,628 and 52,730, respectively, in 1980 (U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population).

- **Water Supply.** New Boston, as well as the Texas and Arkansas communities of Texarkana, obtains treated water from the Texarkana Water Utilities. The Texarkana Water Utilities obtains its raw water from two area reservoirs and has treatment capacity for 37 MGD, it supplies 11 to 12 MGD to water users. It also supplies water to several communities along U.S. Highway 82, including Hooks and DeKalb, and to the Red River County rural water system (telephone communication with assistant director, Texarkana Water Utilities, August 1990).

- **Sewage Treatment.** New Boston currently has a secondary sewage treatment capacity for 600,000 gallons per day (GD). The normal treatment load is 480,000 GD. Effluent is discharged into a stream running across RRAD. The city is currently acquiring land and preparing final design for a new treatment plant that will have a capacity of 950,000 GD. The proposed plant is already permitted. There are no problems with the existing operation (telephone communication with sanitary engineer, City of New Boston, August 1990).

Texarkana Water Utilities services the two communities of Texarkana; it operates a sewage treatment plant with a design capacity of 18 MGD. The normal influent flows, including infiltration, are 9 to 10 MGD. The area does not have a high water table. Infiltration results from periodic rainfall filtering into the system. The plant is permitted for 11.75 MGD. It also has the capacity to store up to 20 million gallons of treated sewage--to moderate peak effluent flow conditions. The plant discharges into Bays Creek, which is a tributary to the Sulphur River. Even with

infiltration, Texarkana Water Utilities is continually under the water quality criteria of its discharge permit. Occasionally, however, the utility must bypass flows because of storm water problems (telephone communication with assistant director, Texarkana Water Utilities, August 1990 and January 1991).

3.3.7 Hazardous and Toxic Wastes, Installation Restoration Program

A PA/SI is scheduled to be performed at RRAD as part of the IRP, in accordance with CERCLA and DERP. The primary focus of the PA/SI is to determine whether past waste management activities may present potential risks to human health and the environment, determine requirements for further investigations to define contamination, and identify any necessary remediation to mitigate risks. The depot has performed an RFA and is scheduled to perform an RFI/CMS to determine action required under the IRP. The depot is not currently proposed for nor has it been placed on EPA's NPL for uncontrolled hazardous waste and past management activities. It is being investigated solely under the IRP.

3.3.8 Hazardous Waste and Material Management Program

3.3.8.1 Hazardous Wastes

Current wastes generated at RRAD include spent solvents and sludges, wastewaters, fly ash, waste oils, paint residue, acids, sodium hydroxide, zinc phosphate, and residuals from OB/OD from ammunition demilitarization.

Waste treatment and storage includes three waste piles for heavy metal sludges located at the industrial waste treatment plant and hazardous waste storage facilities, Buildings 293, 346, and 479. Waste treatment includes the OB/OD of explosives and munitions.

RRAD's RCRA Permit No. HW-50178-000 for the treatment, storage, and disposal (TSD) activities/facilities authorizes RRAD to operate the hazardous waste storage facilities (Buildings 293, 346, and 479) and the waste pile for heavy metal sludge. The OB/OD activities are authorized for operation in the permit under interim status. Disposal of hazardous waste is contracted through DRMO.

RRAD operates the demilitarization of munitions (OB/OD only) under interim status. The two existing deactivation furnaces, which are a part of the demilitarization program at RRAD, are currently closed (one has been upgraded and a permit application is being prepared). Permitted facilities include storage buildings 293, 346, and 479; the waste piles; and a surface impoundment which has been closed.

As part of the RCRA requirements of the permit application for hazardous waste TSD facilities, an RFA was performed. This RFA identified current as well as past TSD facilities or SWMU's and requirements for further study and remediation under the RCRA Corrective Action program, as a condition of the permit.

One identified TSD facility or SWMU--the OTC hazardous waste landfill--was closed in 1986. Prior to 1983, hazardous waste generated from depot activities, sludges, spent solvents, and other waste were accepted at the landfill. The USACE's Fort Worth District developed a detailed closure plan for the area, and the plan was approved by applicable regulatory agents. Closure of the landfill included capping the burial sites, fencing and post closure inspection, and ground water monitoring.

3.3.8.2 Hazardous and Toxic Materials

Hazardous materials, PCB's, asbestos, fuels, munitions, and radioactive materials are stored in several areas at RRAD. PCB's, leaking transformers, and PCB-contaminated waste oils were stored at Building 760. The facility was relocated as part of the OTC landfill closure project. A management and compliance program was performed to leak-test and determine concentrations for all existing transformers. The program includes scheduled removal of transformers containing PCB's by 1991.

Building 594, the ammunition storage area, and Buildings 636, 1167, and B12-3 are used to store radioactive source materials such as promethium, tritium, radium, cobalt, crypton, thorium, and cesium. RRAD presently holds two permits for radiological material. One permit covers less than one millicurie of cesium 137 and 2.5 millicuries of americium 241 used in calibration sources. The other permit covers 600 millicuries of tritium used in static meters and a lightning warning system. Waste materials are placed in metal containers near Building 580. Upon accumulation, this waste is sent to a radioactive materials disposal area in South Carolina.

Pesticides and herbicides are stored in Building 286. All containers and contaminated materials are disposed of through DRMO.

A depot-wide asbestos survey was completed in 1989 for all facility structures. An abatement program for remediation of asbestos-containing materials and friable asbestos is underway and nearing completion for all targeted structures.

RRAD has 36 storage tanks: 14 UST's and 22 aboveground tanks for both bulk fuel and chemical storage. The depot surveyed the tanks to determine the status of compliance with RCRA and State regulatory requirements for

cathodic protection, leak-testing, and structural materials requirements. Tanks are being removed or replaced based on the recommendations of the survey.

3.4 OTHER INSTALLATIONS

The realignment of PUDA will involve increases in personnel spaces at two locations other than TEAD and RRAD. These locations are White Sands Missile Range and Fort Belvoir. A total of 21 spaces would be added to these installations--19 at White Sands and 2 at Fort Belvoir.

These installations were looked at briefly because they would be receiving spaces. They were analyzed according to the two criteria identified in the 1989 SEA Report prepared by the Army Institute for Water Resources for those installations affected by the PUDA realignment. They were quickly screened out as not being significantly affected according to the two criteria because (1) the change in the number of personnel spaces at the subject installation was not greater than or equal to 200 and (2) the change in the number of personnel spaces at the subject installation was less than 200 but not equal to or greater than 1 percent of the current number at the installation.

All required NEPA analysis of the construction of facilities to house the U.S. Army historical property and the IGU at ANAD is provided. Although no new construction will take place at SIAD, ammunition for demilitarization will be received, therefore, HTW and air quality are addressed. In addition, Crane Army Ammunition Activity, Navajo Depot Activity, and McAlester Army Ammunition Plant will receive ammunition for demilitarization. Air quality emissions for these installations are also addressed in the following paragraphs.

3.4.1 Anniston Army Depot

Much of the following information concerning ANAD was taken from the Anniston Army Depot, Anniston, Alabama, Installation Environmental Assessment, November 1984, and the Installation Assessment of Anniston Army Depot, Report No. 119, April 1978

3.4.1.1 General

ANAD is located in northeastern Alabama, approximately 10 miles from the city of Anniston and Fort McClellan, another active U S Army installation. The small community of Bynum lies on the depot's southern boundary; the remaining three boundaries are only sparsely settled. The north boundary is Pelham Range, a wooded operational and training area owned by Fort McClellan. The east and west boundaries are bordered by lightly populated rural lands. A short distance to the south, Interstate Highway 20, a major east-west artery, provides high-speed access to two of the largest cities in the South. Birmingham, Alabama (50 miles west), and Atlanta, Georgia (110 miles east)

In the early 1940's, the U S Army found, in the present site of ANAD, four desirable characteristics for a war-time ammunition depot. First, the Appalachian foothills offered the hilly terrain that provided the desirable cover and concealment for ammunition storage facilities. Second, the inland location, 355 miles from the Atlantic Ocean and 235 miles from the Gulf of Mexico, provided the desired security from naval attack with the weaponry then available to the enemy. Third, main line rail access to the site was available from the Southern Railway track along the southern boundary of the site. Finally, and most important, a stable work force was available from the surrounding agricultural community. The labor-intensive nature of ammunition depot operations in

the 1940's made the ready access to a dependable source of quality labor a prime requisite for such an installation.

Construction of ANAD, which currently includes approximately 15,200 acres, was formally inaugurated in February 1941. The first ammunition storage magazines were completed in 1941. Construction of numerous warehouses, shops, heating plants, and other facilities for the storage of ammunition was soon completed.

During World War II, the mission of the depot was expanded to include a combat equipment storage area. Although the Ordnance Department operated the depot, the Chrysler Corporation assumed management in the latter part of 1943. The depot then became a subsidiary known as the Anniston Warehouse Corporation. During the peak of World War II, more than 1.2 million tons of materiel were handled, including more than 448,000 line items shipped during the 2 years under Chrysler Corporation.

In the latter part of 1946, the accountability of the Coosa River Depot Annex was assigned to ANAD. The Coosa River Depot Annex consisted of 136 igloos occupying an area of 3,009 acres.

Over the years, ANAD's mission was expanded to include the overhaul and repair of ordnance vehicles; the fire control and small arms rebuilding mission from Augusta Arsenal (closed in 1954); the modification of M48A1 tanks and M67 flame throwers, the calibration support mission for the south-eastern states; and logistics support for the Lance missile, Shillelagh, TOW systems, and the Dragon missile. As a result of an Army reorganization, the depot was redesignated Anniston Army Depot on 21 August 1962.

Other construction projects include an industrial waste treatment plant, a vehicle repair and processing facility to ship and receive combat

vehicles, a vehicle maintenance support facility, a headquarters building, and new pollution control facilities.

There are more than 300 permanent buildings, more than 300 permanent or semipermanent buildings or structures, and approximately 1,300 ammunition storage magazines below ground.

3.4.1.2 Current Mission

The current mission of ANAD is to operate a supply depot for the receipt, storage, and issue of assigned commodities; to operate a depot maintenance facility for repair, overhaul, modification, and conversion of assigned commodities; to provide installation support to attached organizations; and to operate assigned facilities.

The major functions are supply (receive, store, ship, and perform care and preservation, as required); depot maintenance (repair, overhaul, modification, and conversion of assigned commodities); ammunition operations (all actions involving conventional, guided missile, toxic chemical munitions, and bulk explosives); and other activities (including receipt of returned materiel, missile support, assembly of equipment, training, and other required activities).

ANAD is also home to three tenant activities. The DRMO has a mission to support the depot, Fort McClellan, and other Government agencies in the area in the receipt, storage, and shipping of excess and scrap property through various programs. The U.S. Army Missile Command has contracted with Rockwell International, a contractor, for the use of depot facilities for the assembly of the Hellfire missile. The Communications Electronics Command office renders technical assistance, communication installation instructions, advice, and communication supply support information for the depot's vehicular communication requirements.

3 4 1.3 Physical Environment

3.4.1.3.1 Physiography and Topography

ANAD lies within the Valley and Ridge province of the Appalachian Highlands. The terrain is gently rolling, with elevations ranging between 600 and 1000 feet m.s.l. The terrain above 700 feet m.s.l. is characterized by smooth, rounded highs with gentle sideslopes.

The depot is underlain by lower Ordovician and Cambrian sedimentary rocks which are generally of three formations. The first includes the Chepultepec, Copper Rider, and Ketona Dolomite Formations with a combined thickness of 2,000 feet. Dolomite is a carbonate sedimentary rock consisting of more than 50 percent by weight or by a real percentage of mineral dolomite under the microscope. The Conasauga Formation, 500 feet thick, is identified as gray, crystalline limestone and dolomitic limestone with minor partings of gray shale that weathers to a soft, green clay shale. This formation underlies the entire east area of the depot and rims a portion of the extreme southern boundary. The oldest formation is the Rome Formation, which obtains a total thickness of up to 1,000 feet and underlies a small area in the south-central portion of the depot. The Rome Formation is composed of shale, limestone, sandstone, and dolomite and ranges in color from light gray to reddish green. Chert fragments are present in all formations except the Ketona.

3.4.1.3.2 Climate

Calhoun County and ANAD have a moist subtropical climate that is mild and equable, with relatively short winters and long growing seasons. The mean annual snowfall is less than 3 inches, and snow never remains on the ground longer than 1 or 2 days. The mean average temperature is about 62 °F, ranging from 44 °F in winter to 77 °F in the summer. The extreme

temperature in winter and summer is 10 and 103 °F, respectively, but these temperatures are of rare occurrence. The average date of the first killing frost is 20 October, and very little frost damage occurs after 15 April. The mean annual precipitation is about 53 inches, and it is well distributed throughout the growing season. The least precipitation occurs in the fall, making fall especially favorable to crop gathering.

During the summer months, air from the Gulf of Mexico and Atlantic Ocean covers the area most of the time, giving rather uniform high temperatures and humidity. In the winter, mild, moist, maritime air alternates with cool, dry, continental air, resulting in many mild, wet days throughout the season.

Weather temperatures are marked by an absence of extremes. Winters are mild; zero temperatures have seldom been recorded. Although high winds are rare, they do happen during severe thunderstorm activities which often develop into tornados. The average annual number of clear days is 137; partly cloudy days, 107; and cloudy days, 121.

3.4.1.3.3 Soils

The U.S. Department of Agriculture identifies two basic soil associations occurring within the depot. The Anniston, Allen, Decatur, and Cumberland Series occurs in the eastern area of the depot and along the southern extremities. This soil association consists of red to dark red, deep, well-drained, sandy clay to clay loam developed from limestone, sandstone, and shale. The permeability of these soils is from 0.8 to 2 inches per hour, and the average pH is 4.5 to 5.4.

The remainder of the depot is blanketed by the Clarksville-Fullerton Soil Association, which is a well to moderately well drained, stone or cherty light yellow brown to red silty clay loam developed from deeply

weathered cherty dolomitic limestone. The permeability of these soils is from 2 to 10 inches per hour, and the average pH is 5.1 to 6.

A soil profile developed from boring logs in the eastern area generally indicated stiff to very stiff clay, silt, clay sand, and clayed gravel in the top 10 to 15 feet below the surface. Firm clays generally occur below these soils and above the top of the limestone.

3.4.1.3.4 Water Resources

ANAD purchases all of its water from the City of Anniston, whose purification plant is 2 miles south of the depot. The source of water from this plant is Coldwater Spring, a natural spring flowing at a rate of 32 million gallons per day. Water is pumped from the plant through a 20-inch cast iron main to the depot. It is then routed from the main line through meters at two locations on the depot.

A pronounced drainage divide bisects the depot from the east-central boundary to the southwest boundary. North of the divide, three small drainageways exit the depot along the west-central boundary, while the remainder of the surface drainage flows north into Pelham Range, a part of the Fort McClellan Military Reservation. All drainage leaving the depot south of the divide flows on private land.

Dry Creek, the principal drainageway in ANAD, originates just north of the depot boundary and flows south along the eastern edge, picking up surface runoff before leaving the depot area. Two manmade lakes, one 5.5 acres and one 36.5 acres, are located in the southwest sector of the depot; these lakes are used for recreation and fire protection purposes. Several ponds are located throughout the depot in areas designated for livestock.

No National Wetlands Inventory mapping is available for ANAD, and no formal wetland surveys have been done. ANAD personnel indicate that no wetlands exist in the areas of the proposed construction; however, there are some wetlands in remote portions of restricted areas (telephone communication with base master planner, ANAD, April 1991). These wetlands are primarily bottomland hardwoods. There is no standing water; however, there is a high water table.

The water-producing aquifers are in dolomite, limestone, sandstone, and shale. Shallow wells supply adequate water for private use, and deeper wells yield only a limited supply of water for industrial use, except for wells drilled into solution cavities or channels.

The regional direction of ground water movement in Calhoun County is to the south and west. Ground water in the southeastern portion of the depot moves in an east-southeast direction. The gradient in the south-central and southwestern portion of ANAD is believed to be to the southwest. The apparent ground water flow in the northern portion is to the west-northwest.

3.4.1.3.5 Noise

Noise created by the depot's maintenance operations is not considered a problem for residents living near the installation's boundaries; no complaints have been received concerning this area as a noise source. As with most industrial operations, however, there are certain work areas that expose employees to sound levels above the limits set forth in Occupational Safety and Health Administration (OSHA) regulations. Within these noise hazard areas, so designated by the depot's safety office, the operators are required to participate in the depot's Hearing Conservation Program. This program requires employees to undergo initial audiogram testing upon beginning work in the area and then, depending on the

severity of the noise hazard, to be tested for hearing deterioration on an annual or semiannual basis. The operators in these areas are furnished and are required to wear hearing protection capable of adequately reducing the surrounding noises to an acceptable, safe level.

The demilitarization of outdated ammunition by demolition is performed at the demolition ground, which is located in a remote part of the depot. Presently, operational procedures require the ammunition to be buried before being destroyed. There have been no complaints of noise produced by the demolition pit operations.

3.4.1 3.6 Air Quality

Calhoun County is in the East Alabama Interstate Air Quality Control Region. The air quality in the area surrounding the depot is good and meets the primary and secondary ambient air standards.

Operation of the depot contributes air pollutants to the atmosphere. These pollutants include particulates, carbon monoxide, sulfur oxide, nitrogen oxides, and hydrocarbons. The air quality monitors that were operated on the depot for the period of 1979-81 did not reveal any problems, with the exception of ozone excursions. The ozone standard has since been raised, and there are currently no known problems (telephone communication, Environmental Management Division, ANAD, January 1991).

The depot has an ongoing OB/OD program. In 1983, 877 tons of ammunition were burned and 651 tons were detonated. The depot currently has the necessary permits and authorization for emissions caused by OB/OD. Emission products resulting from open detonation of common explosives are listed in table 3-4 (presented earlier in this EIS).

3.4.1.4 Biological Resources

3.4.1.4.1 Flora

More than 13,000 acres of land on ANAD are in woodland. This includes the Coosa River Depot Annex area. Approximately 2,100 acres of the area are improved grounds.

Just prior to acquisition in 1941, the timbered areas of both ANAD and the Coosa River Depot Annex were heavily cutover, leaving a cover of low-grade hardwoods such as scrub oak and long-leaf pine on the higher elevations, with better hardwoods occurring on the lower and more fertile elevations. Since acquisition, 1,500 pine seedlings have been planted in open land suitable for forest. The present vegetative cover in the woodland areas is scrub oak and scattered long-leaf pine on the higher, cherty soils, and slash pine, loblolly pine, and hardwoods on some of the more favorable sites. The open land has a cover of Bermuda grass, Dallis grass, Johnson grass, annual lespedeza, lespedeza sericea, kudzu, broomhedge, briars, and honeysuckle. Forest fire damages since acquisition have been negligible. A timber harvesting program has been in effect at ANAD since 1955. Principal timber crops have been pulpwood and saw timber.

Currently, no Federal or State-listed threatened or endangered species occur within ANAD's boundaries.

3.4.1.4.2 Fauna

A large variety of fauna can be found in Calhoun County. Vertebrate species include 27 amphibian, 46 reptile, 192 bird, and 48 mammalian species.

ANAD's fish and wildlife management plan lists seven species of mammals and six species of birds as being plentiful on the installation. Listed are deer, squirrel, rabbit, raccoon, fox, bobcat, turkey, quail, dove, crow, sparrow, and starlings. Approximately 20 acres of fields are available in the northeast area of the depot for the wildlife.

There are 25 ponds on the installation. The average size is one-fourth acre. Although the ponds are not suitable for fish, they are used as water holes for wildlife and as standby water supplies for fire protection of the installation. The two manmade lakes on the installation are used for fishing.

One species of fish, the Pygmy sculpin (*Cottus pygmaeus*), is abundant in Coldwater Spring and Coldwater Creek for 150 yards below the spring at the location of the confluence of Dry Creek and Coldwater Creek. Dry Creek, a tributary to Coldwater Creek near the southeastern corner of ANAD, receives stormwater runoff and cooling water from the installation. The fish were probably farther downstream at one time but are now limited to the area upstream from Coldwater's confluence with Dry Creek. There are an estimated 8,000 fish in Coldwater Spring, which is the only known locality for this species. Pygmy sculpins are difficult to maintain in captivity and are considered a threatened species.

The depot is listed as the potential habitat for the following legally protected mammals, birds, reptiles, and fishes: red wolf, Florida panther, eastern cougar, Indiana bat, ivory-billed woodpecker, American peregrine falcon, Arctic peregrine falcon, Mississippi sandhill crane, brown pelican, Backman's Warbler, American alligator, water darter, and Okelossa darter. No sightings of any of these species have been confirmed at the depot.

There are currently no Federal or State-listed threatened or endangered species within ANAD's boundaries. The red-cockaded woodpecker, an endangered species, and the sculpin snail, a candidate species, occur in Calhoun County but not on ANAD.

3.4.1.5 Cultural Resources

Although no comprehensive cultural resources survey has been conducted, the installation very likely contains significant sites. Brief investigations of several small parcels have been performed by archeologists from USACE's Mobile District. No cultural resources properties were found during these investigations, and currently there are no sites on ANAD listed on or eligible for the NRHP. Personnel from Mobile District currently are developing a Historic Preservation Plan (HPP) for ANAD.

3.4.1.6 Socioeconomics Resources

3.4.1.6.1 General

The region of influence that may be expected to experience socioeconomic effects induced by the realignment actions at ANAD is Calhoun County. This region encompasses 611 square miles.

The population of Calhoun County, according to the 1980 census, was 119,761. The estimated 1989 population was 122,198. Between 1980 and 1989, the population increased by an estimated 2 percent. The 1994 projected population for the county is 121,550. This is a decrease of 0.5 percent from the 1989 estimate.

The 1989 unemployment rate for Calhoun County was 7.0 percent. This compares to a 1989 unemployment rate of 7.0 percent for the State of Alabama and 5.3 percent for the United States.

The personal income of Calhoun County in 1988 was \$1.4 billion, an increase from \$0.9 billion in 1980. The estimated per capita income for 1989 was \$10,102. This compares to the 1989 estimated per capita income of \$10,573 for the State of Alabama and \$13,218 for the United States. The 1994 Calhoun County per capita income is projected to be \$12,609. The 1994 projected per capita income for the State and the Nation is \$13,212 and \$16,669, respectively. Average household income in 1989 for Calhoun County, the State, and the Nation is estimated to be \$27,329, \$28,642, and \$35,205, respectively (BEA, 1988).

3.4.1 6.2 Transportation

- **Highways.** ANAD is normally accessed by automobile and truck. The city of Anniston is most directly accessed from ANAD by State Highway 202. U.S. Highway 78 provides east-west access to ANAD. Interstate Highway 20 (I-20) also runs east-west, just south of U.S. Highway 78. The main north-south thoroughfare near Anniston is U.S. Highway 431, which runs north from I-20 through the city of Anniston.

- **Rail.** ANAD is served by a spur track connecting with the main line of the Norfolk and Southern Railroad. The main line runs east to west, just south of ANAD.

- **Air.** Commercial air travel is available from the Anniston Municipal Airport and from the Birmingham Municipal Airport, which is located approximately 62 miles west of ANAD.

3.4.1.6.3 Utilities

- **Water Supply.** ANAD purchases water from the City of Anniston. The city obtains its supply from Coldwater Spring, which is approximately 2 miles south of the depot. The minimum pumping capacity of the Coldwater Pumping Station was 22.5 MGD in 1984. The depot used 676 million gallons of water in FY 84.

- **Sewage Treatment.** ANAD operates its own industrial waste and sewage treatment plants. The industrial waste treatment plant is operating near design capacity; the average flow at the sewage treatment plant is 480,000 gallons per day. The sewage treatment plant is operating at approximately 90 percent of its capacity. Despite running near capacity, the sewage treatment plant has met all of its NPDES permit requirements in recent years and continues to do so (telephone communication, Environmental Management Division, ANAD, January 1991).

- **Energy.** Electric power is purchased from Alabama Power Company (APC) through a substation located in the east area of the depot. APC's capacity at the depot is 22.5 kVA. This amounts to 67 percent of APC's capacity being used at the depot. The depot consumed 59,012,000 kWh in FY 84.

Fossil fuels consumed at ANAD are coal, No. 2 fuel oil, and reclaimed diesel fuel.

3.4.1.7 Hazardous and Toxic Wastes

ANAD has been placed on EPA's NPL for an identified uncontrolled hazardous waste site designated as the Southeast Industrial Area. The results of the PA/SI performed as part of the IRP indicated that hazardous waste releases at sites in the Southeast Industrial Area may pose a risk

to the public and the environment and may warrant remedial action. These results were used by EPA to determine the relative hazard of the depot and to decide placement on the NPL, as required by CERCLA.

The depot has entered into an interagency agreement with EPA and State regulatory agencies for the planned removal and remediation of these identified waste sites. In addition to previous studies performed at the depot, ANAD will also investigate sites with scheduled RI/FS's to characterize specific risks associated with site wastes and to propose alternatives to remediate areas.

3.4.2 Sierra Army Depot

3.4.2.1 Hazardous and Toxic Wastes, Installation Restoration Program

A Master Environmental Plan (MEP) (performed for USATHAMA by Argonne National Laboratory, 1988) has been issued for SIAD; it details ground water quality, contaminant source areas, and potential remedial action plans to address environmental concerns at the depot. These concerns include a Remedial Action Order issued by the California Department of Health Services to clean up and abate current uncontrolled waste sites that have been determined to cause an impact to human health and the environment.

The current mission at SIAD is the receipt, storage, surveillance, and maintenance of conventional ammunition, critical material, and obligated war reserve material. Past and present activities have resulted in the destruction of many types of ammunition and explosives by burning and detonation and the disposal of many types of hazardous wastes at several disposal sites on SIAD.

Chemical contaminants of primary concern include TNT, HMX, RDX, chlorinated solvents, and fuels. Some of these contaminants have migrated to considerable depths at some sites at SIAD and have entered the ground water. Movement of contaminants into the ground water at the sites at SIAD is expected to continue. Of particular concern are the four onsite wells that provide drinking water to residents of the town of Herlong.

Specific sites identified as presenting a potential risk to human health and the environment include the DRMO trench area, the TNT leaching beds, and the lower and upper munitions burning grounds.

The DRMO trench area, located west of the DRMO gate, consists of two trenches with a combined surface area of 1,000 square meters. One of the trenches is covered and the second is open but inactive. Wastes oils, sludges, and solvents were dumped into the trench and burned during the period 1942-73. Contaminants such as TCE, chlorobenzenes, and fuels have been detected at significant concentrations in soils at the site.

The TNT leaching beds were operated between 1940 and 1949, at which time the washout facility was closed. The unlined ponds or drying beds accepted TNT-contaminated wastewater from the facility during operation. Soils in the beds were frequently excavated and burned in the lower burning ground during production. Monitoring wells installed near the facility detected arsenic, boron, selenium, and zinc, as well as trinitrobenzene, TNT, and 2,4-DNT in water samples analyzed. Soils samples analyzed from the leaching beds contained high concentrations of TNT (>16,000 ppm), HMX, RDX, and metals.

The lower burning ground, located near the northeastern installation boundary, and the upper burning ground, located northeast of the main facility, have been in operation continuously since 1940 for burning conventional ammunition and pyrotechnics, both above ground and in pits

located in various locations in the areas. Soil sampling was performed as part of the MEP for the lower burning ground; it indicated metals (copper, barium, lead, arsenic, chromium, and mercury) in detectable concentrations. Only one borehole detected explosives (RDX and TNT) in low concentrations. The upper burning ground soil sampling indicated EP Tox metals (cadmium, lead, arsenic, and barium) in soils at various depths at the active locations onsite. Explosives were detected in high concentrations throughout area soils at the active burning areas.

Further study has been recommended for these sites. The depot is currently conducting a Remedial Investigation at these specific sites to determine the areal extent of contamination and the potential risks to human health and the environment as part of the IRP. SIAD is not currently proposed for nor listed on the EPA's NPL. The NPL is used to identify uncontrolled hazardous waste sites which may require remedial action as determined by EPA under the authority of CERCLA.

3.4.2.2 Hazardous Waste and Material Management Program

3.4.2.2.1 Hazardous Wastes

In keeping with the mission functions of storage, surveillance, demilitarization, and maintenance of conventional ammunition, wastes generated include explosives (D003), solvents (F001-F005), paints, and fuels. Explosive wastes and residuals are generated by demilitarization of conventional ammunition. Solvents, paints, and fuel wastes are produced as a result of vehicle and missile maintenance activities.

SIAD has interim status for the OB/OD of ammunition at the lower and upper burning grounds. Interim status for the deactivation furnace was revoked in November 1989. The devices required for air pollution control, identified during the test burn, or demonstration program, are currently

being redesignated as specified in 40 CFR 264, subpart O, for control of incinerator stack gas emissions. Application for a RCRA permit will be resubmitted following revisions to the design and subsequent test burn.

SIAD has not submitted a RCRA permit application for storage of hazardous wastes and contracts with DRMO for disposal of wastes generated within 90 days.

Solid wastes, municipal waste, asbestos, and building debris are disposed of in the existing depot landfill. During earlier years of operations, other types of waste were placed in the landfill, including pesticide containers, metallic dusts from the popping furnace, and other industrial wastes. The landfill is currently being investigated under the IRP RI/FS to determine the nature and extent of contamination within the landfill area and the potential for contaminant migration to surrounding soils and ground water. However, the sanitary landfill will continue to accept solid wastes, including building debris, as specified by the State regulatory agency requirement for operation.

3.4.2.2.2 Hazardous and Toxic Materials

Hazardous materials stored and used at SIAD include PCB's, fuels, and conventional ammunition. Conventional ammunition is stored in magazines located in the center of the depot and includes cluster bombs, bulk explosives, and small arms ammunition.

PCB transformers are located throughout the installation. The depot is currently in the process of testing all PCB transformers and is implementing a long-term management plan for removal and replacement of all PCB transformers. The designated PCB storage area houses transformers removed as a result of the survey and leaking transformers. PCB's,

contaminated waste oils, and transformers containing PCB's are overpacked and stored in the storage area prior to transport and disposal by DRMO.

There are 108 aboveground and underground storage tanks at SIAD. There is an ongoing program of replacement and removal of underground fuel storage tanks in accordance with 40 CFR 280. It is projected that 50 tanks will remain in service at the completion of this program and that 58 tanks will be removed or closed by FY 92.

3.4.3 Installations Receiving Conventional Ammunition (Air Quality)

Part of the ammunition scheduled for demilitarization will be transferred to four receiving installations: Navajo Depot Activity, SIAD, Crane Army Ammunition Activity, and McAlester Army Ammunition Plant. Demilitarization activities have potential air quality effects. For that reason, existing conditions are provided for these installations.

3.4.3 1 Navajo Depot Activity

Regional air quality is excellent under the EPA's Prevention of Significant Deterioration Program. The Arizona Department of Environmental Quality (ADEQ) is the local enforcement agency. Air quality at Navajo Depot Activity is also excellent. Discharges at the depot that affect air quality include vehicle emissions, plant heating, and demilitarization. Air discharge permits required for Navajo Depot Activity sources greater than 500,000 BTU's per hour are issued by the ADEQ. The agency has recently become more stringent in setting permit standards for air quality OB/OD permits; permits are now written to specify pollutant to be emitted by quantity and configuration of ammunition to be demilitarized.

The depot is currently preparing to demilitarize approximately 12,000 short tons of 90 mm shells. These shells are disassembled; the propellant is then burned and the projectile is exploded. There is a current air emission permit allowing OB/OD of these shells. The permit limits the depot to 10,000 pounds of explosive per hour and to two times within a 24-hour period. The permits are renewed annually (telephone communication, director of ammunition, Navajo Depot Activity, January 1991).

Emission products resulting from open detonation of common explosives are shown in table 3-4, presented earlier. Under current permit conditions at the Navajo Depot Activity, concentrations of pollutants except carbon monoxide are within EPA standards. Carbon monoxide releases often exceed EPA standards but quickly dissipate with no lasting effects. The maximum aboveground plume height of combustion products of a detonation is approximately 260 feet. No existing data or modeling is available to show violations of air quality or air toxic standards beyond the installation's boundaries (extracted from DEIS Base Realignment and Closure, Fort Wingate Depot Activity, Navajo Depot Activity, Umatilla Depot Activity, Hawthorne Army Ammunition Plant, DA, AMC, September 1990).

3.4.3.2 Sierra Army Depot

SIAD is located within Lassen County, which is in attainment with the National Ambient Air Quality Standards for criteria pollutants. The depot is also in compliance with these standards (telephone communication, environmental staff, SIAD, October 1990). Discharges affecting air quality include vehicle emissions, plant heating emissions, and emissions from demilitarization activities.

Emission products resulting from open detonation of commonly used explosives in ammunition are shown in table 3-4, presented earlier. The depot currently has an air emission permit from the Lassen County Air

Quality Board for OB/OD operations, including the demilitarization of cluster bombs. The permit does not limit the quantity of devices that can be demilitarized; however, care is taken not to operate when the wind is in the direction of populated areas.

Ammunition is being sent to SIAD for long-term storage. On 30 September 1990, 161,000 short tons of ammunition were identified as being in long-term storage at SIAD (Joint Ordnance Commander Group Storage Management Handbook as of 30 September 1990, AMCCOM, Rock Island, Illinois, November 1990).

3.4.3.3 Crane Army Ammunition Activity

Crane Army Ammunition Activity has facilities for the demilitarization of white phosphorus ammunition, including 105 mm shells. The industrial process used is a recycling process which uses the ammunition to be demilitarized as feed stock and produces phosphoric acid for commercial purposes. A water scrubber extracts phosphorus from the smoke given off by the kiln. The amount of smoke is small, and the source is exempt with regard to an air quality permit (telephone conversation, environmental coordinator, January 1991).

3.4.3 4 McAlester Army Ammunition Plant

McAlester Army Ammunition Plant has facilities and the necessary authorization to demilitarize some types of smoke shells; however, there are nine types of smoke shells that cannot be demilitarized at McAlester. These types can be stored for future shipment to the Pine Bluff Army Arsenal in Arkansas for demilitarization (telephone conversation, environmental staff, January 1991). Ammunition is being sent to McAlester for long-term storage. On 30 September 1990, 415 short tons of ammunition were identified as being in long-term storage at McAlester (Joint Ordnance

Commander Group Storage Management Handbook as of 30 September 1990, AMCCOM, Rock Island, Illinois, November 1990).

3.4.3.5 Long-Term Storage - Miscellaneous Locations

The amount of ammunition demilitarization occurring at an installation is partially a function of the quantity of ammunition in long-term storage at that installation. This is because it is usually more efficient, safer, and less costly to dispose of defective or outdated ammunition onsite when possible. The types and amounts of ammunition that can be disposed of onsite vary according to installation, equipment, and permitting limitations. Generally, at a minimum, some OB/OD will be authorized at a receiving installation.

Because of the relationship between long-term storage and ammunition demilitarization, installations receiving ammunition from PUDA for long-term storage purposes are evaluated for potential air quality effects. Receiving installations not covered in more detail elsewhere in this report are Hawthorne Army Ammunition Plant and Seneca Army Depot. On 30 September 1990, 420,000 short tons of ammunition were identified as being in long-term storage at Hawthorne and 81,000 short tons of ammunition were identified as being in long-term storage at Seneca (Joint Ordnance Commander Group Storage Management Handbook as of 30 September 1990, AMCCOM, Rock Island, Illinois, November 1990). Shipments of ammunition for long-term storage are also proposed for unidentified small activities and miscellaneous activities. Because of the small size of these shipments, no environmental effects are anticipated.

4 - ENVIRONMENTAL AND SOCIOECONOMIC CONSEQUENCES

4.0 INTRODUCTION

The consequences as a result of the PUDA realignment are discussed separately for each of the four primary installations. Only those resources that were previously identified will be addressed in this section. Impacts associated with HTW and air quality at several other installations are also provided.

The reader is reminded that under the No Action alternative the existing resources, as described in the previous section, would remain the same.

4.1 PUEBLO DEPOT ACTIVITY

4.1.1 Physical Environment

No direct effects on the physical environment at PUDA are expected with the realignment. The realignment action involves the transfer of missions, materiel, and spaces from PUDA to several other locations within the United States. Realignment will not involve physical changes other than cessation of activities and mothballing of buildings at PUDA.

There may be some indirect effects, however, as a result of the realignment action. Indirect effects may result from transportation of materiel out of PUDA. Examples include possible temporary soil disturbances, a temporary increase in airborne contaminants from vehicular activity, a lessening of the possibility of contamination of ground or surface waters from materiel stored at PUDA, and a temporary increase in

noise levels. Additional information on this temporary increase in noise levels and existing and future vehicular traffic noise is discussed later under "Transportation." None of these effects are considered significant.

4.1 1 1 Air Quality

The realignment action would directly affect air quality in two ways. First, approximately 3,375 tons of conventional ammunition are scheduled for demilitarization at PUDA. This action would result in emissions of pollutants to the air. Second, the reduction in activity as a result of the realignment would reduce the need for heating facilities at PUDA and would result in a reduction in the discharge of air pollutants from these sources.

Planned activities include the use of OB/OD to demilitarize 75 mm and 90 mm artillery shells, 90 mm projectiles, MK3 grenades, and other miscellaneous ammunition stocks. One or more additional air pollution emission permits will be required to allow OB/OD of all 3,375 tons of ammunition (verbal communication, environmental engineer, PUDA, October 1990). A model will be used to estimate the types and quantities of pollutants discharged by OB/OD of this ammunition as part of the permitting process.

Demilitarization of conventional ammunition at PUDA will occur during realignment. It is not foreseen as a long-term activity. The CDOH will not issue an air quality permit in violation of State regulations. Although demilitarization activities will result in the emission of additional pollutants into the air, State regulations will be adhered to and no significant degradation of air quality is anticipated. For this reason, the demilitarization of ammunition will have an adverse but insignificant effect on air quality.

Realignment will result in reduced air emissions because of the shutdown of unneeded boilers used for heating. Of the 31 boilers presently operated, 19 will be shut down. Boilers projected to remain operational are those in Buildings 51 (two boilers), 125, 126, 127, 524 (five boilers), and 731 (two boilers). The estimated reduction in emissions resulting from realignment is presented in table 4-1. As shown in the table, total emissions would be reduced by 18.5 tons per year. The reduction is not as great as the shutdown of over 60 percent of the installation's boilers might indicate because the 12 remaining boilers include the 5 largest units on the installation. These are the coal-fired boilers located in Building 524. The remaining seven boilers are all oil fired.

The reduction in the emissions of air pollutants shown in table 4-1 is not considered significant because the area currently meets air quality standards and has a high level of air quality. The reduction of emissions is an insignificant beneficial impact.

Table 4-1
Reduction in Stack and Pollutant Emissions as a Result of Realignment
(tons per year)

<u>Pollutants</u>	<u>Existing Conditions</u> ^{1/}	<u>Realigned Conditions</u>	<u>Emission Reduction</u>
Particulates	4.2	0.4	3.8
Sulfur dioxide	84.0	75.9	8.1
Nitrogen oxides	37.8	34.5	3.3
Volatile organic compounds	0.6	0.2	0.4
Carbon monoxide	<u>14.9</u>	<u>12.0</u>	<u>2.9</u>
Total	141.5	123.0	18.5

^{1/} From Compliance Determination Worksheet and EIS Update for 1988, PUDA, 1990.

4.1 2 Biological Resources

The loading of equipment and property during realignment is expected to cause temporary disturbances to grassed areas adjacent to buildings needed for staging the move. Given the small areas involved, the previous disturbance of the areas, and the limited use of the areas by wildlife, these disturbances are expected to be insignificant. Ultimately, however, the impacts on the biological resources as a result of realignment should be positive because the area would tend to revert back to its natural character. Because no construction is involved, there would not be any ground disturbance other than that incidental to transporting materiel.

4 1 3 Cultural Resources

Federal laws and regulations require the completion of certain steps to meet DA's cultural resources responsibilities. These efforts include (1) determining, in consultation with the SHPO, the need for a field survey to identify cultural resources within the Area of Potential Effect, (2) evaluating, in consultation with the SHPO, identified cultural resources as to their eligibility for the NRHP; (3) applying, in consultation with the SHPO, the criteria of effect and adverse effect to cultural resources on or eligible for the NRHP; and (4) developing, in consultation with the SHPO and the Advisory Council on Historic Preservation (ACHP), specific measures to avoid, minimize, or mitigate adverse effects on cultural resources eligible for or listed on the NRHP.

Because of the CHEM DEMIL mission and the HTW contamination areas, there are presently no plans to dispose of PUDA property. Therefore, existing cultural resources will continue to be protected under Federal caretaker responsibilities. The Colorado SHPO will be consulted regarding this determination.

As stipulated in the 5 February 1990 Programmatic Agreement executed between DA, the ACHP, and the National Conference of SHPO's, an HPP must be completed before 1995 for BRAC-affected installations that remain in Army control. Interim maintenance of buildings and protection of archeological sites will be assured through implementation of the HPP. Any future disposal of PUDA lands will require further environmental impact analyses and additional cultural resources actions at that time.

4.1.4 Socioeconomic Resources

4.1.4.1 Introduction

The Economic Impact Forecast System (EIFS) was developed by the Army (1) to provide access to selected statistics regarding the socioeconomic characteristics of any multicounty area in the United States and (2) to implement a readily available technique for assessing the magnitude and significance of potential socioeconomic impacts. The EIFS forecast models are used to estimate local socioeconomic impacts generated by such military activities as mission change, construction, and training. The EIFS uses a procedure for assessing the significance of economic impacts; it is the Rational Threshold Value (RTV) method.

The RTV method gauges the economic resiliency of a community by determining threshold values which represent the maximum percentage fluctuations that have occurred historically in a localized area. Any fluctuation in percentage outside of these threshold values is considered a potentially significant impact. The assignment of thresholds is made on an individual basis. The RTV method is used in conjunction with the EIFS forecast models to assess the significance of impacts for a specific geographic area and activity. More information on the EIFS and the RTV method is contained in appendix D.

The impacts to population, employment, and income were identified by entering the number of people involved in the realignment into the EIFS model. Estimated changes in those categories were provided by the EIFS forecast model. These estimated changes were then compared to the RTV (expressed as positive RTV and negative RTV)

Using the RTV method, the impacts to population, employment, and income were considered significant if the change due to the realignment was greater than or less than the positive and negative RTV's, respectively

The RTV's for population, employment, and income for the PUDA region are presented in table 4-2

Table 4-2
PUDA
Rational Threshold Values

<u>Category</u>	<u>Positive RTV</u> (percent)	<u>Negative RTV</u> (percent)
Population	1 760	0.657
Employment	4 935	3.651
Income	6 145	3.813

Source SEA Report, PUDA, 1990

To determine impacts to housing and schools, one of the following levels of impact (LOI) was assigned: negligible, low, moderate, or high. Annual increases of over 10 percent in a community's population were judged to cause a high LOI (President's Economic Adjustment Committee, 1981; Hammer, Siler, George Associates, 1982, Department of Energy, 1978). Conversely, impacts were judged to be negligible when a population change was less than 1 percent. The low LOI was defined for this EIS as an increase in community population of 1 to 5 percent over projected baseline

levels. At this level, proportionate increases in housing demand, school enrollments, public service demands, and local government expenditures generally would be within normal growth patterns and would require little response by affected communities.

Impacts to housing and schools were identified by entering the number of people directly involved in the realignment into the EIFS model. Data from the Bureau of Economic Development, BEA, and Regional Economic Information System provided projections for the number of housing units, which were then compared to the estimates of changes due to the realignment.

The impacts to housing and school systems were considered significant if the change due to the realignment was greater than 5 percent of the total change projected.

Impacts (regional losses or gains) associated with realignment actions are considered to be primary impacts. These include the following parameters: personnel employed at the installation and their salaries, procurement, and the initial expenditures of realignment-associated construction. Secondary impacts are those effects induced by the initial (primary) impacts, e.g., a decrease (change) in the regional demand for goods and services that is associated with a regional decrease (change) in the number of persons earning wages and salaries. In this case, the change (decrease) in demand is the secondary impact that was induced by the primary impact, which is the change (decrease) in the number of actual or potential purchasers (persons earning wages and salaries). Total impacts for a region include all of the primary and secondary impacts within that region.

4.1 4 2 Population

The realignment will result in a net decrease of 613 employees (610 civilian and 3 military) at PUDA. This in turn could result in a decrease of 1,706 persons in the regional population (primary and secondary impacts). This net total decrease in regional population is 1 percent and falls below the -0.657 percent threshold value. Using the RTV method, this is considered significant, however, this decrease is only 1 percent of the already projected 1994 population of 123,392. Therefore, the change in population is not considered significant.

4 1 4 3 Employment

The realignment (primary and secondary impacts) could result in a decrease in regional employment of up to 1,330 full-time jobs. This decrease represents a change of less than 2.7 percent in the total regional employment and lies between the threshold values. Based on this analysis, the impact to the region is not considered significant. Additionally, the Pueblo economy has strengthened greatly in recent years. The annual unemployment rate has decreased from 16.6 percent in 1982 to 8.2 percent in 1989 (Colorado Labor Force Review, Colorado Department of Labor and Employment, May 1990).

The unemployment rate in Pueblo County has continued to drop, with a seasonally adjusted rate of 6.5 percent recorded for November 1990 (Monthly Colorado Labor Force Review, Colorado Department of Labor and Employment, January 1991). Because of the small change in regional employment and the recent strength of the area economy, the decrease in employment resulting from the realignment of PUDA is not considered a significant impact.

Although not found to be significant, the impact on employment, especially the employment of the Hispanic labor force, could be a major negative impact. The potential impact of the realignment on the Pueblo County labor force, by racial group, is shown in table 4-3.

Table 4-3
Labor Force by Race

Racial Group	1989 Labor Force	<u>Employment</u>		<u>Unemployment</u>	
		Projected ^{1/}	Projected	Projected	Projected
		With	With	With	With
		1989	Realignment	1989	Realignment
Hispanic	18,250	16,000	15,430	12.3	15.4
White	29,900	28,250	27,534	5.5	7.9
Black	820	730	700	11.0	14.6
Native American	300	260	252	13.3	16.0
Other	<u>380</u>	<u>340</u>	<u>334</u>	<u>10.5</u>	<u>12.1</u>
Total	49,650	45,580	44,250	8.2	10.9

^{1/} Employment changes are based on the racial composition of the PUDA labor force for direct employment losses and the racial composition of the county labor force for indirect job losses.

Sources: Statistical information for Affirmative Action Programs, Pueblo MSA, May 1990; PUDA office of the Commander, January 1990

The loss of employment at PUDA and associated indirect employment could result in several impacts on directly affected employees and households. These impacts include the short-term or long-term loss of employment and income, the disruption of households and families as a result of relocation, and the social and financial cost of retraining unemployed workers. Although not identified as significant, these likely negative effects are sufficiently severe to require that some action be taken to assist dislocated workers.

4.1.4.4 Income

The realignment may result in a \$17.8 million annual decrease in total regional wages and salaries. Military salaries could decrease annually by \$88,000, and civilian salaries could decrease by \$17.7 million.

Annual PUDA expenditures for goods, services, supplies, and materials may decrease by \$5.17 million. The regional sales volume could decrease by \$52.7 million annually. Of this total, \$24.6 million would be a primary impact and \$28.1 million would be a secondary impact. The decrease represents a 4-percent change from the 1982 total regional sales.

Regional personal income could be reduced by \$26.5 million annually. This represents a 1.3-percent decrease from the 1986 regional personal income. This 1.3-percent change in personal income lies between the threshold values and, therefore, is not considered to be significant.

4.1.4.5 Housing

The realignment could result in a decrease of up to 610 occupied housing units (426 owned and 184 rented units), depending on if the workers have to move for employment. This decrease represents 1.3 percent of the 1994 projected number of households. This is less than a 5-percent change and is not considered to be significant.

4.1.4.6 Schools

The estimated decrease in the number of students attending public school in Pueblo County, including both District 60 and District 70, is 372. This reflects the number of students whose parents may have to relocate as a result of lost employment. The estimated loss is approximately 1 percent of the total number of students attending the two

districts during the 1988-89 school year and is not considered a significant impact.

4.1.4.7 Transportation

Three aspects of the PUDA realignment would affect truck and rail shipments and automobile traffic on the installation and in the immediate area. These are the removal of existing ammunition stocks, the removal of stored materiel and equipment, and the reduction in the level of employment.

- **Ammunition Removal** There are presently 52,800 short tons of ammunition at PUDA that will be shipped to other activities for long-term storage and distribution. The receiving activities and the quantities of ammunition to be received are presented in table 2-1. Additional ammunition at PUDA will be shipped to customers. Because this is a normal activity at PUDA and not a change due to realignment, shipments to customers are not evaluated.

In addition to ammunition being transported to other installations for storage and future distribution, 6,519 short tons of ammunition will be shipped to other facilities for demilitarization or disposal. Some ammunition will also be demilitarized at PUDA. The quantities and types of ammunition that will be shipped to other facilities or retained at PUDA for demilitarization are shown in table 4-4.

- **Raw Materiel and Stock Removal** PUDA stores general supplies, raw materiel, and military equipment. Raw materiel is stored there by the DLA. Military stocks include mobilization equipment, SWAPDOP and WSS equipment, and Army historic artifacts. The type, quantity, and destination of raw materiel and military stocks to be shipped from PUDA

Table 4-4
Shipments for Demilitarization

<u>Item</u>	<u>Quantity</u> (short tons)	<u>Receiving Activity</u>
3.5-inch rockets	16	Unknown
Cluster bombs	6,900	Sierra Army Depot
90 mm shells	117	Navajo Depot Activity
Small arms and other ammunition	785	Tooele Army Depot
MK3 grenades	64	Retained at Pueblo Depot Activity
75 mm shells	1,855	Retained at Pueblo Depot Activity
90 mm projectiles	302	Retained at Pueblo Depot Activity
105 mm shells (smoke)	<1	McAlester Army Ammunition Plant
105 mm shells (white phosphorus)	<1	Crane Army Ammunition Activity
MICOM stocks		
(rocket motors)	7,000 ^{1/}	Unknown
Miscellaneous	<u>1,154</u>	Retain at Pueblo Depot Activity
Total	18,193	

^{1/} These are MICOM stocks and are not the responsibility of AMCCOM

Source Accountable Records on NICP, AMCCOM, Rock Island, Illinois, as of 1 October 1990

are listed in table 4-5 These figures are as of October 1990, and quantities may change because of operational requirements

- **Transportation Alternatives** The realignment-related transport of materiel, supplies, and equipment from PUDA to other installations will result in an additional consumption of energy in the form of diesel fuel, the emission of air pollutants, and added noise. Fuel use and air emissions are dependent on the type or mix of transportation modes used. There are two possible modes of transportation available at PUDA; these are shipment by rail or by truck Three alternative approaches are considered to evaluate transportation These are total shipment by truck,

Table 4-5
Raw Materiel and Stock Shipments

<u>Raw Materiel/Stocks</u>	<u>Quantity</u> (short tons)	<u>Destination</u>
General supplies	63,000	Tooele Army Depot
DLA commodities		
Rubber	37,551	Navajo Depot Activity
Tungsten	148	Retain at Pueblo Depot Activity
Mercury	440	Retain at Pueblo Depot Activity
Fluorspar	26,884	Retain at Pueblo Depot Activity
Manganese	5,001	Retain at Pueblo Depot Activity
SWAPDOP and WSS	41,000	Sierra Army Depot
Third Army mobilization	1,109	Fort Carson
Fort Carson stock	1,535	Fort Carson
Historic materials	<u>874</u>	Anniston Army Depot
Total	177,542	

Source: Verbal communication, TEAD, October 1990

total shipment by rail, and a 40/60 split of truck/rail shipping. The use of all rail or all truck transport is not practical because of the inherent economics of the two modes. Generally, small shipments can be more economically shipped by truck, and very large shipments can be most effectively shipped by rail. These two extremes are used to bracket the potential range of impacts. The 40/60 truck/rail split is based on experience and is considered a likely alternative. All other parameters being equal, the decisions regarding the mode of transport used will be based on economics and availability of carriers at the time of shipment.

The three transportation alternatives are evaluated for energy efficiency, emission of air pollutants, cost, noise, and safety

- Energy Efficiency. Energy consumption for both truck and rail transport is measured by the consumption of diesel fuel. Fuel consumption for an average semitrailer truck is based on a 20-ton load and reported

mileage of 6 5 miles per gallon (telephone communication, Werner Enterprises, October 1990) These assumptions provide an estimated rate of 130 ton miles per gallon For rail shipments, a rate of 362 ton miles of freight per gallon (R1 Report to Interstate Commerce Commission for Year Ending 31 December 1989, Union Pacific Railroad) is used As shown in table 4-6, total fuel consumption for all truck and all rail would be 1,211,700 and 435,300 gallons, respectively The 40/60 truck/rail split results in fuel consumption of 585,300 gallons Because of the inherent efficiency of the rail mode of transportation, shipment all by rail uses 776,400 gallons less than all truck shipping and 150,000 gallons less than the truck/rail split Refer to table 4-6

- Air Pollution Emissions Air pollution results from the operation of trucks and rail carrier equipment The amount of emissions is a function of the quantity of fuel used and the condition and efficiency of the diesel motors used Air pollution emissions for particulates, sulfur dioxide, carbon monoxide, hydrocarbons, and nitrogen oxides are presented in table 4-7 As shown in the table, the rail transport alternative results in the lowest level of emissions of pollutants--with a total of 145 tons. The truck transport alternative is the highest--with emissions of 305 tons The 40/60 truck/rail split is proportionately lower than the other two alternatives--with a total emission of 210 tons. If rail could be used to the exclusion of trucks, air emissions would be 160 tons less than if trucking alone were used

Table 4-6
Energy Consumption by
Transportation Alternative

<u>Activity</u>	<u>Total Tons Shipped</u>	<u>Miles</u>	<u>Ton/ Miles (1,000)</u>	<u>Fuel Consumption ^{1/}</u>		
				<u>All Truck</u>	<u>All Rail</u>	<u>40/60 Truck/ Rail</u>
Tooele Army Depot	69,500	589	40,936	314.9	113.1	152.1
Red River Army Depot	27,600	831	22,936	176.4	63.4	85.2
Anniston Army Depot	1,000	1,264	1,264	9.7	3.5	4.7
Fort Carson	2,600	50	130	1.0	0.4	0.5
Hawthorne Army Ammunition Plant	3,700	1,039	3,844	29.6	10.6	14.3
McAlester Army Ammunition Plant	7,600	691	5,252	40.4	14.5	19.5
Navajo Depot Activity	37,700	576	21,715	167.0	60.0	80.7
Seneca Army Depot	2,200	1,724	3,793	29.2	10.5	14.1
Sierra Army Depot	50,400	1,144	<u>57,658</u>	<u>443.5</u>	<u>159.3</u>	<u>214.2</u>
Total			157,528	1,211.7	435.3	585.3

^{1/} Thousands of gallons of diesel fuel

Table 4-7
Air Emissions by Transportation Alternative
(figures in tons)

<u>Pollutants</u>	<u>Truck</u> ^{1/}	<u>Rail</u> ^{2/}	<u>40/60</u> <u>Truck/Rail</u>
Particulates	29	5	15
Sulfur dioxide	29	12	19
Carbon monoxide	73	28	46
Hydrocarbons	25	20	22
Nitrogen oxides	<u>149</u>	<u>80</u>	<u>108</u>
Total emissions	305	145	210

^{1/} Emission estimates are based on Appendix L of Air Quality Handbook for Preparing Environmental Impact Reports, South Coast Air Quality Management District, April 1987

^{2/} Emission estimates are based on Table II-2 1, Compilation of Air Pollutant Emission Factors, Volume II, Mobile Sources Fourth Edition, EPA, September 1985.

- Cost There are two components to the cost of transporting ammunition and materials from PUDA. These are loading costs and line haul costs. Loading costs are especially important with regard to loading ammunition onto railcars. This is because the ammunition must first be loaded onto a truck and then transported to the rail siding. For this reason, the cost of loading ammunition on a railcar includes the cost of both loading and unloading three trucks before the railcar can be loaded, the average railcar load is 60 tons. The same is not true of loading other materials because there is sufficient rail access to other parts of the installation. Line-haul costs are those charged for actually transporting the materials. These are normally charged by the truck mile or ton mile.

The costs of shipping the ammunition and materials from PUDA to the locations shown in table 4-6 for each alternative are presented in table 4-8. The assumptions used in computing the costs are presented as table

footnotes. As shown in the table, the lowest cost transportation mode is rail. The savings would be approximately \$447,000, or 4 percent less than for truck transport. If only ammunition is considered and a distance of 1,000 miles is assumed, truck transport is approximately 10 percent less costly than rail transport. This is due to the high cost of loading.

Table 4-8
Transportation Cost by Alternative

<u>Alternative</u>	<u>Short Ton Miles (1,000)</u>	<u>Loads</u>	<u>Mileage ^{1/} Cost (\$1,000)</u>	<u>Load ^{2/} Cost (\$1,000)</u>	<u>Total Cost (\$1,000)</u>
Truck	157,528	10,115	\$9,452	\$1,593	\$11,045
Rail	157,528	3,373	\$8,633	\$1,965	\$10,598
Split					
Truck	63,011	4,046	\$3,781	\$ 637	\$ 4,418
Rail	<u>94,517</u>	<u>2,023</u>	<u>5,180</u>	<u>1,178</u>	<u>6,358</u>
Total Split	157,528	6,069	\$8,961	\$1,815	\$10,776

^{1/} Mileage cost is estimated at \$0.0600 per ton mile for trucks and \$0.0548 per ton mile for rail.

^{2/} Loading costs are based on the number of manhours required to load the respective mode of transportation. They are as follows: \$157.50 per 20-short-ton truckload and \$315.00 per 60-short-ton railcar load of ammunition.

- Noise Both trucks and railroad engines produce high levels of noise under normal operating conditions. At highway speeds, medium and heavy trucks generate noise levels ranging from 84 to 88 dBA (measured at 50 feet from the source). Diesel locomotives typically generate noise levels ranging from 88 to 98 dBA (measured at 50 feet from the source). The lower noise level of trucks is offset by the more frequent events required to transport a similar quantity of goods. A 10- to 25-car train carries as much as 30 to 75 trucks.

- Safety There is a risk in the transport of materiel by either truck or by rail because of the possibility of highway or railroad accidents There is an additional risk in the transport of explosives, such as ammunition, propellants, rockets, and fuses, on the public highway and railroad systems. The added risk is due to the potential for truck or train accidents which could involve damage to or possible incineration or detonation of the materiel being shipped To keep such risks to a minimum, all required precautions are taken by trained personnel in the shipment of ammunition from a military depot Ammunition is loaded and shipped in accordance with AMC Regulation 385-100 and other applicable State and Federal regulations All trucks are inspected before they can be used for transport

The safety records at PUDA were reviewed in an attempt to determine if there is a safety advantage with one of the alternatives In the past 5 years, there have been three accidents involving shipments from PUDA. All three involved trucks One accident was caused by incorrectly loading the vehicle The other two were the result of trucks jackknifing during ice and snow conditions (verbal communication, Safety Office, PUDA, October 1990). No accidents involving shipment by rail were experienced during this period. None of the accidents resulted in the burning or detonation of the materials being transported

Based on the experience at PUDA, it would appear that trains have a slight safety advantage over trucks--at least during winter driving conditions. Additionally, accidents are frequently the result of human error, and there are more people required for truck transport Between 1985 and 1989, PUDA shipped an average of 32,000 tons of ammunition annually Assuming 40 percent was shipped by truck, with 20-ton loads, 3,200 truck shipments were made during the past 5 years Three accidents represent less than 0.1 percent of the total shipments made. Although no accidents involving trains loaded at PUDA have been recorded during the

past 5 years, such accidents can occur. Possible accidents include derailments, train-motor vehicle collisions, and train-train collisions. Another risk of transport by train concerns double handling. The ammunition storage igloos at PUDA are not accessible by rail. For this reason, it is necessary to load ammunition on trucks at the igloo and unload it at the rail siding. Although the risk is slight, there is an additional hazard created by the double handling required for loading railcars. With the precautions mandated for such shipments, the likelihood of a serious accident occurring, one that could result in serious injury or loss of life, is slight. The likelihood of either a truck or a rail accident is extremely small, therefore, there is no advantage of one over the other.

- Conclusion. With regard to energy use as measured by diesel fuel consumption and emissions of air pollutants, rail transport is clearly superior to truck transport. Rail uses 776,400 fewer gallons of fuel and emits 160 fewer tons of pollutants into the air. The difference in fuel consumption is large but negligible if compared to the billions of gallons a year consumed along truck and rail routes. Most air emissions would occur in rural areas that currently have high air quality. The difference between the emissions of trucks and rail carriers due to the PUDA realignment, in all likelihood, would not be measurable. The cost, noise, and safety differences between the truck and rail alternatives are small. There appears to be a cost advantage to transporting ammunition by truck. There is no significant noise or safety advantage to either alternative. For this reason, a 40/60 truck/rail split is used for evaluation of potential traffic impacts due to realignment.

- Traffic. Realignment will cause (1) an increase in truck and rail activity because of the distribution of existing ammunition and stocks to other facilities and (2) a decrease in automobile traffic because of the reduction in employment. A truck/rail split of 40/60 is used for

evaluation purposes. The distribution of ammunition and stocks at PUDA will occur over a 4½-year period. Estimates of total truck and rail shipments and weekly average shipments during FY 94 are presented in table 4-9. Average weekly shipments are presented for FY 94 because that is the year during which the highest level of transportation activity is projected to occur at PUDA and is the period most likely to experience impacts. During that year it is likely that the supply, ammunition, and SWAPDOP mission transfers will be underway. Because of construction schedules for the new buildings at Anniston, it is possible that the Army historic artifacts and the IGU will be moved during that year. All other shipments are assumed to be moving on the same schedule as the ammunition mission.

As shown in table 4-9, realignment will result in an average weekly increase in truck traffic at PUDA of approximately 27 vehicles per week. Rail traffic will increase by 13 to 14 railcars per week. If economics dictate that all transportation will be by truck, an average of approximately 68 vehicles per week will be required. If railcar is determined to be the preferred mode, an average of 22 to 23 railcars per week will be required.

The use of Army Reserve or National Guard truck convoys is being considered as an alternative to the use of commercial trucks for the transfer of ammunition. This would be done in conjunction with annual training for qualified units, and the transfer of 28,300 short tons could be handled by convoys. Possible destinations include TEAD, RRAD, STAD, Hawthorne Army Ammunition Plant, and McAlester Army Ammunition Plant (telephone communication, AMCCOM, August 1990). Military long-haul ammunition transports similar to conventional semitrailer trucks would be used. Convoy size could vary, but convoys in the past have consisted of up to nine semitrailers and one tractor used as a backup. The chief advantages of using military convoys over commercial haulers are cost

Table 4-9
Estimated Shipments by Destination

<u>Destination</u>	<u>Total Quantity (short tons)</u>	<u>Total Shipments</u> ^{1/}		<u>Average Weekly Shipments</u>	
		<u>Trucks</u>	<u>Railcars</u>	<u>Trucks</u>	<u>Railcars</u>
Tooele Army Depot	69,500	1,390	695	10 3	5.1
Red River Army Depot	27,600	552	276	2 4	1 2
Anniston Army Depot	1,000	20	10	0.3	0.1
Fort Carson	2,600	52	26	0.2	0.1
Hawthorne Army Ammunition Plant	3,700	74	37	0 3	0 2
McAlester Army Ammunition Plant	7,600	152	76	0.6	0.3
Navajo Depot Activity	37,700	754	377	3.2	1.6
Seneca Army Depot	2,200	44	22	0 2	0 1
Sierra Army Depot	50,400	1,008	504	8 7	4 3
Small activities	500	20	10	<0 1	<0 1
Misc. activities	400	8	4	<0 1	<0 1
Defense Reutilization and Marketing Office	2,500	50	25	0 2	0.1
Retained at Pueblo Depot Activity	35,900	--	--	NA ^{2/}	NA ^{2/}
Unknown	<u>7,000</u>	<u>140</u>	<u>70</u>	<u>0 7</u>	<u>0.3</u>
Total	248,600	4,264	2,132	27.1	13.4

^{1/} Assumes 20 short tons per truck and 60 short tons per railcar.

Sources: Telephone communication, AMCCOM, Rock Island, Illinois, August 1990; verbal communication, BRAC office, TEAD, October 1990

savings and hands-on training for the reservists. The environmental impacts of convoying would be the same as those for regular truck transport.

During the past 5 years, PUDA has averaged ammunition movements of 56,000 short tons per year. The highest amount handled was 72,000 tons in 1987 (verbal communication, BRAC office, TEAD, October 1990). Using the assumptions contained in table 4-9, a 5-year average shipping rate of 22 trucks and 11 railcars per week is derived. These figures increase to 28 trucks and 14 railcars per week when the 1987 peak is considered.

The installation road system and the State, primary, and interstate highways in the area can easily handle an additional 7 trucks per day. The rail system can also easily accommodate three to six additional railcars per day. The concentration of 10 semitrailer trucks in a military convoy would not have a significant impact on area transportation. No significant adverse or beneficial impacts on the transportation system are likely to result from the necessary transfer of ammunition and stocks as a result of realignment.

The realignment of PUDA will reduce automobile traffic on the installation, however, the impact would not be significant. There would also be little impact on offpost highways, railroads, or air traffic in the area.

4 1 4 8 Utilities

4 1.4 8 1 Pueblo Depot Activity

- **Water Supply** Realignment will have little impact on the operation of the water supply facilities. Although less water would be required, treatment and storage facilities would be kept at full capacity to provide

adequate supply for fire-fighting purposes (telephone communication with environmental engineer, PUDA, August 1990). Some of the 13 wells may be shut down, and daily withdrawal will be reduced

- **Sewage Treatment.** The sewage treatment plant, which has a peak capacity of 167,000 gallons per day is currently operating at about 115,000 gallons per day. The plant's minimum operational level is believed to be 5,000 gallons per day. A reduction in waste load of 40 percent is anticipated as a result of realignment (telephone communication with environmental engineer, PUDA, October 1990). This reduction to 69,000 gallons is still well over the plant's minimum operating capacity and no adverse effect on plant operation or effluent discharge is likely. The plant will continue to operate at the lower level, and an alternative treatment system or major structural modifications to accommodate reduced loads are not necessary (telephone communication with environmental engineer, PUDA, January 1991).

- **Energy.** The realignment of PUDA would reduce the demand for energy in the area by very little. A reduction of approximately 10 million kWh in demand for electric energy represents only slightly over 1 percent of previous usage. The decreased use of natural gas, fuel oil, and coal would also constitute only slight reductions on an area basis and is, therefore, considered insignificant.

4 1.4.8.2 Area Communities

- **Water Supply** The Pueblo Board of Water Works supplies water to over 125,000 people. The small reduction of population in Pueblo due to realignment of PUDA would not significantly impact the water system operation. The effect would be to increase excess capacity by a minor amount.

Any reduction in population in the city of Boone resulting from realignment at PUDA would decrease demand for water in the city. This could decrease the problems experienced during the dry summer months. There would be no other impact on system operation. This effect is, therefore, considered insignificant

The Avondale Water District would have additional water capacity to the extent realignment results in a population loss. This change would not affect system operation, and the impact is therefore considered insignificant

- **Sewage Treatment** The Pueblo city sewage treatment plant is an activated sludge facility. This type of plant can be affected by reductions in waste load. However, in the case of the Pueblo plant, any reduction likely to result from realignment at PUDA will be minor and is within design considerations. Therefore, there will be no significant impact on sewage treatment operations.

Boone and Avondale both operate sewage lagoons for waste treatment. Sewage lagoons are not impacted by reductions in waste load, and therefore the impact would not be significant. Some reductions in effluent infiltration, land application, and discharge in Collier ditch may result if Avondale experiences a population loss.

4.1.5 Hazardous and Toxic Wastes, Installation Restoration Program

Realignment or closure should have no significant impact on identified and suspected waste areas, on waste management requirements for SWMU's, or on the susceptibility to the public and the environment from uncontrolled waste areas as a result of these activities.

The previously identified AREE's/SWMU's, including uncontrolled waste sites, were evaluated in the previous section under current site or baseline conditions. Future use activities associated with AREE's/SWMU's under realignment include mission transfer, increased short-term vehicular traffic in contaminated areas, and decreased staffing for maintenance and monitoring of existing SWMU's.

With or without realignment, the requirements for further action at each SWMU would be initiated. The IRP currently being carried out by DA for management and compliance with CERCLA statutory requirements is being conducted at PUDA under RCRA and section 211 of SARA. Specifics regarding program compliance are detailed in sections 120 and 211 of CERCLA, as amended by SARA, and the National Contingency Plan. Under RCRA, the process of identification, investigation, and remediation for sites identified as not being in compliance with regulatory criteria is initiated by an RFA performed by EPA or the State. This preliminary assessment, through the use of literature searches, chemical sampling, and interviews, identifies potential waste-generating facilities and contaminant source areas. Many of the sites listed as AREE's in section 3 were also identified as being SWMU's by EPA during the PUDA RFA (NUS, Corporation, November 1987). To determine further action for particular areas, a supplemental investigation will need to be performed--an RFI. The sites will be characterized for the nature and extent of contamination and for the risk to public and environmental receptors. A determination is then made as to whether remediation is warranted in the light of regulatory requirements and risk to human health and the environment. A Corrective Measures Study will need to be performed based on the conclusions of the RFI; a specific remediation plan to address past waste releases and threats of future releases to the environment is a part of this study.

The SWMU's/AREE's at PUDA are under various stages of investigation and remediation under RCRA. Seven specific SWMU's/AREE's are currently being assessed by an RFI/CMS. Further study for the remaining SWMU's/AREE's was recommended in the RFA and Enhanced PA, and it will be an ongoing program/mission for the installation during and after realignment. Studies include ground water monitoring and chemical sampling.

The subsequent transfer of properties as a result of future closure is dependent on the provision of section 120(h), "Federal Facilities, Property Transferred by Federal Agencies," of CERCLA. This section stipulates that the conditions of transfer of Federal properties are dependent on the evaluation and notice of any hazardous substance known or suspected to be stored or released on the property, the quantity of the substance, and the type of substance to be included in the deed or contract for transfer. It also requires that any remedial action necessary to mitigate and control releases that could impact human health or the environment be conducted prior to transfer.

The CDOH holds RCRA corrective action authority and has indicated that all applicable investigations be conducted following RCRA guidelines; EPA, Region VIII, concurs with this policy. Further investigation and delineation of sites previously funded by DERP shall be authorized by the BRAC account. Funding for the investigation and cleanup will now be provided through the DA Real Property Management Account. These studies include the current RFI/CMS and interim measures actions.

The activities defined by the interim status for the installation require specific monitoring requirements. RCRA closure of a waste management facility may be considered a separate action in most cases and would be regulated by 40 CFR 264 and 265 for waste management facilities. RCRA closure may include long-term quarterly ground water sampling and

analysis and an inventory to determine the status of compliance. These activities will continue during and after realignment until it is determined that these sites no longer pose a risk to human health and the environment or release contaminated wastes

4.1.6 Hazardous Waste and Material Management Program

4.1.6.1 Hazardous Wastes

Realignment should have no significant impact on hazardous waste management at PUDA, specifically waste generation, waste treatment, storage, and storage programs

Interim status under RCRA for conventional ammunition demilitarization and for hazardous waste storage does not require application for modification under subpart G of 40 CFR 270 unless it can be demonstrated that the installation has exceeded its design capacity or is treating, storing, or disposing of a waste that is not specified in the permit application

Waste generation at PUDA would decrease as the missions are transferred. Waste generated from painting, degreasing, and conventional ammunition demilitarization will decrease substantially as the installation activities, with the exception of CHEM DEMIL, are reduced to caretaker status. Design capacities specified in existing interim status should not be exceeded

The waste types specified in the permit application that require treatment, storage, and disposal should not change as a direct result of realignment. Under the current interim status for OB/OD, waste types (explosive- and metal-contaminated residuals generated from the destruction of conventional ammunition) should remain essentially the

same Most conventional ammunition stocks will be transferred to other installations for storage and for demilitarization However, as shown in table 4-4, of the ammunition to be retained at PUDA for demilitarization, the 75 mm and 90 mm projectiles are not included in the current permit application for types of ammunition specified for treatment. A modification of the existing application will be required to allow demilitarization of these specific kinds of ammunition

PUDA's deactivation furnace is not currently operational, and the RCRA interim status expired in November 1989 Preliminary test burn results indicated design revisions to air emission controls would be necessary to meet permit requirements to treat hazardous wastes The deactivation furnace has undergone partial RCRA closure, however, the Army's position is that it could still be used to treat nonhazardous waste munitions such as class C munitions Munitions requiring demilitarization shall be scheduled within the confines of the existing OB/OD interim status requirements

The INF Static Missile Firing Program for Pershing missiles, covered under the OB/OD interim status authorization, is scheduled for conclusion in 1991 Support functions associated with the program should be relegated to caretaker status by 1992 Changes to application requirements are not anticipated through the conclusion of this program.

The CHEM DEMIL schedule is independent of the realignment; however, the types of wastes treated and disposed of, as well as the quantities, should not exceed permit application requirements The details of this activity, the types of wastes, and the potential impacts of implementation will be discussed in a separate NEPA analysis on CHEM DEMIL for PUDA

The hazardous waste storage facility, located in Building 540, will continue to accept wastes for indefinite storage and eventual disposal

during and after realignment. The types of waste accepted are not anticipated to vary from those indicated on the permit application requirements. The quantities of wastes stored should decrease with the decrease in mission activities such as degreasing, painting, and maintenance. The design capacity of the storage area, therefore, should not be exceeded. The facility will continue to be operated by DRMO after realignment and until closure

4.1.6.2 Hazardous and Toxic Materials

Of the areas indicated in figure 3-4 as being currently active, several buildings and structures will be closed and relegated to caretaker status during realignment. The closure of specific facilities is expected to be dependent on requirements for support of the ongoing CHEM DEMIL mission. Table 4-10 indicates the active facilities and the dates they are scheduled for closure. Ammunition storage igloos will be closed as stocks are transferred or demilitarized. Fuel storage areas not required to support the CHEM DEMIL mission will also be closed.

It should be noted that hazardous material storage areas such as the PCB storage area, Building 100, the pesticide storage area, Building 630, and the DRMO staging facility, Building 540, are scheduled to remain operational until base closure.

Utilities will be retained as needed for CHEM DEMIL support. Areas scheduled to retain service include the administration support area and the electrical transmission lines servicing the G Block area. The service at the areas scheduled for caretaker status will be disconnected adjacent to the structures. Those PCB transformers currently located throughout the installation that are not used after realignment will require removal,

Table 4-10
Active Facilities and Dates Scheduled for Closure

<u>HTW Waste and Material Management Facilities</u>	<u>Closure Date</u>
North Demolition Area	Base Closure
North Burn Areas 1 and 2	Base Closure
Deactivation (Popping) Furnace	1995
G Block	Base Closure
Igloos A-F	1997
Hazardous Waste Storage Building	Base Closure
Fuel Storage Sheds	1994
Pesticide Storage, Building 630	Base Closure
INF Support, General	1993
Hazardous Material, Building 535	1993
DRMO Staging Facility, Building 540	Base Closure
Landfill	Base Closure/RFI Recommendations
DLA Stocks	Base Closure (with the exception of the rubber stockpile)
PCB Storage, Building 100	Base Closure
Mercury Storage	Base Closure

storage, and disposal in Building 100 as the areas are closed. It is anticipated that the current management plan for testing, monitoring, and disposal will incorporate changes necessary as a result of realignment. Design capacity is unlikely to be exceeded, disposal may be accelerated as space requirements are increased

The liquid propellant storage areas and the fuel storage sheds are scheduled for closure in 1993 and 1994, respectively. UST's associated with specific mission functions will be evacuated and closed in accordance with 40 CFR 280 as specific operations are curtailed. Corrective action, other than closure, if indicated, may be integrated with the study/remediation planned specifically for PUDA under realignment and future closure. The UST's required to support the CHEM DEMIL mission will

continue to be monitored under the current scheduled removal/replacement management program in place at PUDA

The facility-wide asbestos surveys that were begun in 1991 will include structures scheduled for closure. Asbestos abatement will be performed as necessary for buildings identified as having asbestos-containing materials, in accordance with standard Army procedures.

In summary, no significant impacts to hazardous waste and material management at PUDA are anticipated as a result of realignment

4.1.7 Mitigation

The realignment action at PUDA would not cause any significant adverse biological or cultural impacts on the resources at the installation. Also, because no construction activity would occur on PUDA as a result of the realignment, no existing wetlands would be affected. Therefore, no mitigation is required.

Even though the socioeconomic impact of the realignment on the Pueblo area is considered adverse, it is not considered significant on a regional basis, and no mitigation is required. To help alleviate the severity of the unemployment impact, however, the current Dislocated Workers Assistance Program at PUDA could be continued until the realignment is completed. The program, which is operated through the Colorado Governor's office and provides funds to operate the PUDA Assistance Center, assists unemployed workers through testing, training, counseling, and relocation assistance. To date, 393 employees have taken advantage of the program, and 41 of these employees have been placed in jobs outside of PUDA. Also, the OEA will continue to be involved in the Pueblo community.

Realignment would have no significant impact on identified and/or suspected waste areas, SWMU's, or the susceptibility of the public and the environment to uncontrolled waste areas. As stated in the Affected Environment section of this EIS, the investigation and remediation of PUDA is an ongoing mission. Realignment and the subsequent transfer of conventional ammunition are unlikely to impact the IRP. Therefore, no mitigative actions are required.

Hazardous material management programs would be curtailed as a result of realignment. However, no identified significant impact is associated with the reduction in material management activities. Therefore, no mitigative actions are required.

4.2 TOOELE ARMY DEPOT

4.2.1 Physical Environment

The physical environment at TEAD would experience some relatively minor impacts from the construction of a new storage facility. TEAD-N consists of approximately 24,700 acres. The proposed construction area is a previously disturbed 20-acre parcel in the northeast part of the installation. It is anticipated that only minor modifications to the layout of the land would occur prior to any construction. Temporary soil disturbances, a temporary increase in airborne contaminants from vehicular activity, and a temporary increase in noise levels would occur during construction. Because best engineering practices as well as State standards would be implemented during construction, none of these temporary effects are considered significant. In addition to these temporary effects, a permanent increase in the number of personnel at TEAD will increase automobile traffic and automobile traffic noise. This increase represents an approximate 3-percent increase, which would have little impact on traffic or traffic noise on the depot or on offpost.

highways, railroads, or air traffic in the area. These impacts are not considered significant.

4.2.1.1 Air Quality

As a result of realignment, 785 tons of small arms ammunition, including class A and class B explosives, will be shipped to TEAD for possible demilitarization. An existing APE furnace, which has been modified for these materials, would be used. The furnace has a capacity of approximately 300 pounds of energetic materials per hour (telephone communication with staff, TEAD, October 1990). The existing air emission permit allows operation for 10 hours per day or 2,080 hours per year. This is a sufficient capacity to accommodate the demilitarization of this small arms ammunition in 4 to 5 months, depending on how much of the gross weight of ammunition is containers and packaging.

The depot will receive an additional 5,700 short tons of ammunition from PUDA to be stored on a long-term basis. This storage could increase the amount of demilitarization of ammunition which is incident to long-term storage at TEAD. On 30 September 1990, TEAD had 189,000 short tons of ammunition designated as long-term storage (Joint Ordnance Commander Group Storage Manager Handbook Storage as of 30 September 1990, AMCCOM, Rock Island, Illinois, November 1990). The addition of 5,700 short tons would increase this amount by only 3 percent. This small increase would have little effect on demilitarization of ammunition at TEAD and is considered insignificant. All demilitarization activity required by the PUDA realignment will be in compliance with the existing or a new air emission permit. No significant adverse effect on air quality is anticipated as a result of this demilitarization activity.

4.2.2 Biological Resources

Some loss of vegetation, none of which is threatened or endangered, would occur because of planned construction to house the supply materiel being transferred from PUDA. However, given the small area involved, its previous disturbance, and its limited use by wildlife, this impact is considered insignificant

4.2.3 Cultural Resources

Federal laws and regulations require the completion of certain procedures to ensure that cultural resources values are an integral part of an agency's decision-making process for any undertaking. These efforts, referred to as Section 106 compliance, typically include (1) consulting with local American Indian groups, (2) determining, in consultation with the appropriate SHPO, the need for an on-the-ground inventory of the Area of Potential Effect in order to locate cultural resources, (3) evaluating, in consultation with the SHPO, encountered resources as to their eligibility for the NRHP, and (4) determining, in consultation with the SHPO and the ACHP, appropriate mitigation measures for each eligible or listed NRHP property affected by the undertaking (e g , selective preservation and adaptive reuse) In turn, these procedures should be incorporated into the installation's HPP as appropriate

It was determined that the proposed new construction and the BRAC-related renovations would have no effect on eligible or listed NRHP properties The Utah SHPO concurred with this determination in a letter dated 2 January 1990

4.2.4 Socioeconomic Resources

4.2.4.1 Introduction

The impacts to population, employment, and income were identified by entering the number of people involved in the realignment into the EIFS model. Estimated changes in population, employment, and income were provided by the EIFS forecast model. These estimated changes were then compared to the RTV (expressed as positive RTV and negative RTV)

Using the RTV method, the impacts to population, employment, and income were considered significant if the change due to the realignment was greater than or less than the positive and negative RTV's, respectively.

The RTV's for population, employment, and income for TEAD are presented in table 4-11.

Table 4-11
TEAD Four-County Region
Rational Threshold Values

<u>Category</u>	<u>Four-County Region</u>		<u>Tooele County</u>	
	<u>Positive RTV</u> (percent)	<u>Negative RTV</u> (percent)	<u>Positive RTV</u> (percent)	<u>Negative RTV</u> (percent)
Population	1.544	0 884	3 522	1 496
Employment	3 442	2 070	5 141	3 397
Income	3.431	3 823	8 481	3.547

Source: Construction Engineering Research Laboratory, EIFS, 1990

Impacts to housing and schools were identified by entering the number of people directly involved in the realignment into the EIFS model. Data from the Bureau of Economic Development, BEA, and Regional Economic Information System provided projections for the number of housing units

which were then compared to the estimates of changes due to the realignment

The impacts to housing and school systems were considered significant if the change due to the realignment was greater than 5 percent of the total change projected

Two-thirds of the labor force at TEAD reside in Tooele County. For this reason, impacts to both Tooele County and the four-county region have been addressed

4 2 4 2 Population

The realignment will result in a net increase of 116 civilian spaces at TEAD. This could result in an increase of 380 persons in the regional population (primary and secondary impacts). This net total increase in regional population is much less than 1 percent of the estimated 1989 total regional population and is within the threshold values. Therefore, this increase would not be considered significant.

The realignment could result in an increase of 254 persons in the Tooele County population (primary and secondary impacts). This increase is 0.9 percent of the estimated 1989 total regional population and is within the Tooele County threshold values. Therefore, this increase would not be considered significant.

4 2 4 3 Employment

The realignment (primary and secondary impacts) may result in an annual increase in regional employment of 245 full-time jobs. This represents less than 1 percent of the 1986 total regional employment and

lies between the threshold values. The increase is therefore considered insignificant.

As a result of realignment-associated construction during the 1991-94 construction period, employment in the four-county region could increase jobs by 386. This effect on employment is less than a 1-percent increase and lies between the threshold values. It is therefore considered insignificant. This effect also is temporary.

The realignment (primary and secondary impacts) could result in an annual increase in Tooele County employment of 163 full-time jobs. This represents a 1.3 percent increase in employment and lies within the Tooele County threshold values. This would have a positive effect on the County. However, this impact is not considered significant.

As a result of realignment-associated construction, employment in Tooele County could increase full-time jobs by 257. This represents a 2-percent change in employment and lies between the Tooele County threshold values. This impact would be temporary and is not considered significant.

4.2.4.4 Income

The realignment may result in a \$3.3 million annual increase in total regional wages and salaries. This entire amount would be for civilian salaries. There would be no change in military salaries. The \$3.3 million increase could be augmented by \$50.7 million in realignment-associated construction and \$7.1 million in one-time expenditures. The increase in the number of personnel holding two jobs and the increase in working dependents could result in an annual \$983,800 increase in regional salaries.

Annual TEAD expenditures for goods, services, supplies, and materials could increase by \$2.2 million. The regional sales volume could increase \$53.8 million annually. Of this total, \$14.0 million could be a result of the population increase. The increase represents a change from the 1982 total regional sales. During the 1991-94 construction period, increases in the sales volume could be \$34.2 million, and one-time expenditures could increase the sales volume by \$5.6 million. The sales volume could increase by \$2.3 million because of working dependents and the increase in personnel holding two jobs.

Regional personal income could increase by \$5.2 million annually. This represents less than 1 percent of the 1986 regional personal income. Regional personal income is expected to increase by (1) \$8.5 million during the 1991-94 period because of realignment-associated construction, (2) \$723,000 as a result of one-time expenditures, and (3) \$1.3 million because of working dependents and the additional personnel holding two jobs. The effect on income is less than 1 percent and lies between the rational threshold values, therefore, the effect is not considered significant.

Tooele County personal income could increase by \$3.5 million annually. This represents 1 percent of the 1988 Tooele County personal income. Tooele County personal income could be expected to increase by (1) \$5.7 million during the realignment-associated construction, (2) \$482,000 as a result of one-time expenditures, and (3) \$870,000 because of working dependents and the additional personnel holding two jobs. The effect on income is approximately 1 percent and lies between the Tooele County rational threshold values. This impact is not considered significant.

4.2.4.5 Housing

The realignment may result in an increase of 116 occupied housing units (79 owned and 37 rented units) This is less than a 1-percent change over the 1994 projected total year-round housing units and is not considered significant because it is too small to have any discernable effect on housing availability or cost.

The realignment could result in an increase of 77 occupied housing units in Tooele County This is less than 1 percent of the 1994 projected total year-round housing units and is not considered significant

4 2.4 6 Schools

There could be an increase of approximately 60 students attending public schools in the Tooele area. The students could be spread throughout the four-county socioeconomic impact area and could have only minimal impacts on the different schools The additional students could increase total enrollment by less than 0 1 percent based on 1988-89 figures. If all students resided in Tooele County, which is a very unlikely possibility, total enrollment in that county would increase by only approximately 0.4 percent Both the 0 1-percent and 0 4-percent levels of change are considered insignificant because they are too small to have any effect on available classroom space, classroom size, or teacher-pupil ratios

4.2 4.7 Transportation

The primary traffic generated by the depot consists of employee automobile, truck, and rail traffic

Increased automobile, truck, and rail traffic could result from realignment activities. Because of the additional 116 spaces at TEAD, automobile traffic could increase slightly during the one-half hour prior to and immediately following the workday, no significant impact however is likely. A small increase in truck traffic and rail shipments is projected to facilitate the movement of ammunition and general supplies from PUDA to TEAD. The increase could be approximately 10 trucks and 5 railcars per week--a negligible change. Overall, depot and area roads have sufficient capacity to handle the additional traffic and have handled similar volumes in the past during periods of high employment.

A potential impact could occur if a military convoy accessed the depot during rush-hour traffic. This can be easily avoided by scheduling shipments and arrival times at the depot. Additionally, Tooele city traffic can be avoided by the use of Sheep Lane Road, which runs west of the city and connects to State Highway 112. Sheep Lane Road is a surfaced, two-lane county road that is already used by trucks to access the north gates of the depot (telephone communication, city engineer, City of Tooele, August 1990). No significant impacts to transportation are likely as a result of the realignment at PUDA.

4.2.4.8 Utilities

4.2.4.8.1 Tooele Army Depot

- **Water Supply** Realignment is not expected to increase water use appreciably. Even if additional water is needed, it has been estimated that water use could be more than doubled without a permanent impact on the water supply or ground water. Therefore, increased water demand would not be a significant impact.

- **Sewage Treatment.** The present domestic sewage treatment facility is underutilized, with only one of the two 8-acre lagoons normally receiving water. The second lagoon provides more than enough capacity to accommodate the waste generated by the additional employees. For this reason, no significant environmental impact is anticipated as a result of realignment.

The new industrial treatment plant is operating at about 60 percent of capacity. The addition of storage facilities for supplies at TEAD will not greatly increase the industrial waste load, therefore, no significant impact will occur.

- **Energy** Base energy requirements are insignificant when compared to area needs. In 1980, TEAD energy requirements were 0.635 percent of the total power being generated by the Utah Power and Light Company. Fuel oil needs for heating were 0.2 percent of the total amount of oil provided by the distributor. The relatively small increases in depot facilities and the addition of employees and their families as a result of realignment would have no significant impact because the existing generating capacity and existing oil distribution resources can handle this increase.

4.2.4 8.2 Area Communities

- **Water Supply.** The additional employment created at TEAD because of the PUDA realignment will likely increase the population of Tooele. The city has grown rapidly during the past two decades, and the anticipated growth is not out of line with that experienced previously. The city's current raw water supply will not accommodate substantial city growth without problems. However, Tooele is currently pursuing the acquisition of additional water rights to serve the future population (telephone communication with city engineer, City of Tooele, August 1990).

These sources of water will be pursued with or without depot realignment. For this reason, the additional population resulting from realignment will not affect the operation of Tooele's water system to a significant extent.

- **Sewage Treatment** Both Tooele and Salt Lake City have sufficient excess sewage treatment capacity to accommodate any growth likely to occur as a result of the realignment of TEAD. Therefore, the increase will have no significant impact on treatment capability. A small but insignificant increase in effluent discharge into the Great Salt Lake could occur as a result of realignment.

4.2.5 Hazardous and Toxic Wastes, Installation Restoration Program

As stated in section 3, the investigation and remediation of TEAD-N is an ongoing mission. The realignment of PUDA, with the subsequent transfer of conventional ammunition for demilitarization and the transfer of conventional storage items to TEAD-N, is not likely to impact the IRP. Noncompliance with certain hazardous waste management requirements identified in the Notice of Violation, mentioned in section 3.2.7, have either been resolved or will be addressed by studies under the ongoing IRP.

The condition of or remediation of contaminated waste sites should not be affected by the new construction and renovation required to house the transferred storage items. Environmental analyses were performed to determine the impacts of any potential new construction as a result of realignment. The analyses, which are available at TEAD, did not indicate the siting of facilities within contaminated areas.

4.2.6 Hazardous Waste and Material Management Program

4.2.6.1 Hazardous Wastes

Conventional ammunition to be transferred from PUDA for demilitarization includes small arms ammunition. The deactivation or popping furnace at TEAD-N is used for small arms demilitarization. A RCRA application for OB/OD at TEAD-N, which includes the deactivation furnace, currently specifies treatment of the 35 mm munitions as well as other small arms munitions. Transfer of PUDA conventional ammunition may be incorporated into the existing program. The additional quantities and types of wastes will not require a modification of the application. However, the trial test burn for the deactivation furnace required as part of the demonstration program prior to activation has not been successful to date. The test burn must be performed as part of the permit application for final issuance of a RCRA permit. The design of the facility is currently being revised, and it is anticipated that emissions will achieve acceptable standards and that a permit will be issued prior to ammunition transfer for demilitarization.

Wastes generated that require storage and disposal may increase as a result of realignment. Explosive residuals, from demilitarization activities, may be stored in one of the designated hazardous waste storage facilities for explosive wastes: magazines C-815, A-101, and 1368. These former magazines have an interim status for storage of hazardous waste for indefinite periods prior to disposal. It is not anticipated that waste residuals will differ from current application requirements or that the design capacity of the permit application will be exceeded for the ammunitions transferred for demilitarization.

The other hazardous waste storage areas should be unaffected by realignment activities. PUDA stocks transferred for storage are not

anticipated to generate wastes that may require storage and disposal as hazardous waste

The sanitary landfill, which accepts building debris, asbestos, and sanitary waste, may have increased activity as a result of realignment. Building debris excessed as a result of renovation and construction will require disposal. The landfill is currently scheduled for investigation under the IRP for past hazardous waste disposal activities and contamination, however, closure is not indicated.

4.2.6.2 Hazardous and Toxic Materials

The PCB storage area (Building 659) and the PCB transformers located in various locations at the installation should not be affected by the PUDA realignment. The PCB transformers at TEAD-N are currently being surveyed for compliance and are being leak-tested. This will continue regardless of realignment.

The underground fuel storage tanks at TEAD-N will not be affected by the realignment action. Construction and renovation will not affect numbers, replacement, or closure of tanks located at TEAD-N.

4.2.7 Mitigation

The proposed new construction at TEAD would not cause any significant impacts to the environmental resources at the installation. Although the new construction would occur in a section of land containing wetlands, as identified earlier in this EIS, there will be no loss of wetlands. Therefore, no mitigation is required at TEAD.

Realignment would have no significant impact on identified and/or suspected waste areas, SWMU's, or the susceptibility of the public and the

environment to uncontrolled waste areas. As stated in the Affected Environment section, the investigation and remediation of TEAD is an ongoing mission. Realignment and the subsequent transfer of conventional ammunition are unlikely to impact the IRP. Therefore, no mitigative actions are required.

The hazardous material management program, as stated earlier, has no identified significant impacts associated with material transfer, construction, and storage as a result of realignment. Therefore, no mitigative actions are required.

4.3 RED RIVER ARMY DEPOT

4.3.1 Physical Environment

Because new construction is not associated with this realignment action, impacts to the soils or water resources at RRAD are not anticipated.

A permanent increase in the number of personnel spaces at RRAD will increase automobile traffic and automobile traffic noise. This increase represents only approximately a 1-percent increase, which would have little impact on traffic or traffic noise on the depot or on offpost highways, railroads, or air traffic in the area. These impacts are not considered significant. There would also be a temporary insignificant noise increase during the transfer of ammunition into storage at RRAD.

4.3.1.1 Air Quality

As a result of realignment, an additional 27,600 short tons of ammunition will be added to long-term storage at RRAD. This is a 30-percent increase over the 93,000 tons present in September 1990 (Joint

Ordnance Commander Group Storage Management Handbook, storage as of 30 September 1990, AMCCOM, Rock Island, Illinois, November 1990) A 30-percent increase in long-term storage is considered sufficiently large to warrant the consideration of air quality effects due to an increase in incidental demilitarization activity

During the past 2 years, an estimated 92 tons of demilitarization per year was required because of long-term storage (telephone communication, RRAD, January 1991) A 30-percent increase in this amount would be approximately 28 tons The actual amount of demilitarization required would depend on the types and age of the ammunition stored and could vary greatly from year to year because of budgetary or other restraints However, based on an overall increase of 30 percent in incidental demilitarization activity, it is likely that modifications to pending permits for OB/OD and the APE-1236 furnace will be required The demilitarization activity required by the addition of long-term storage at RRAD will be in compliance with the pending permits For this reason, no significant adverse effect on air quality is anticipated as a result of this demilitarization activity

4 3 2 Biological Resources

The overall impact of the realignment on biological resources would be minimal No species on the State or Federal threatened and endangered species list are known to inhabit RRAD or the various areas involved in the realignment However, some species of birds (eagles, falcons, and others) may migrate through or frequent the area near Elliott Creek Reservoir The limits of the rifle range danger area include the upper arms of this reservoir During personnel visits to the rifle range by a field team, including a field biologist, the minimal wildlife activity observed was limited to common birds No mammals were observed in the

cleared portions of the range, which was not active at the time (DA, 1990). This impact cannot be completely evaluated

The transfer of the conventional ammunition mission may cause temporary disturbances to grassed areas adjacent to storage facilities (i.e., igloos, magazines) during the unloading process. Given the small areas involved, the previous disturbance of the areas, and the limited use of the areas by wildlife, these disturbances are expected to be insignificant.

4.3.3 Cultural Resources

The BRAC actions currently proposed for RRAD will not affect significant cultural resources properties because no BRAC-related construction is planned at RRAD. The Texas SHPO concurred with this determination of no effect in a letter dated 7 September 1990.

4.3.4 Socioeconomic Resources

4.3.4.1 Introduction

The impacts to population, employment, and income were identified by entering the number of people involved in the realignment into the EIFS model. Estimated changes in population, employment, and income were provided by the EIFS forecast model. These estimated changes were then compared to the RTV (expressed as positive RTV and negative RTV).

Using the RTV method, the impacts to population, employment, and income were considered significant if the change due to the realignment was greater than or less than the positive and negative RTV's, respectively.

The RTV's for population, employment, and income for RRAD are presented in table 4-12

Table 4-12
RRAD
Rational Threshold Values

<u>Category</u>	<u>Positive RTV</u> (percent)	<u>Negative RTV</u> (percent)
Population	2 251	0 665
Employment	4 192	5 743
Income	5 272	4 385

Source SEA Report, RRAD, 1990

Impacts to housing and schools were identified by entering the number of people directly involved in the realignment into the EIFS model. Data from the Bureau of Economic Development, BEA, and Regional Economic Information System provided projections for the number of housing units which were then compared to the estimates of changes due to the realignment.

The impacts to housing and school systems were considered significant if the change due to the realignment was greater than 5 percent of the total change projected

4 3 4 2 Population

The realignment may result in a net increase of 61 civilian spaces at RRAD This could result in an increase of 170 persons in the regional population (primary and secondary impacts) This net total increase in regional population is 0 1 percent of the estimated 1989 total regional population. This increase is within the threshold values and would, therefore, not be significant

4.3.4.3 Employment

The realignment (primary and secondary impacts) may result in an annual increase in regional employment of 88 full-time jobs, which represents a change of less than 1 percent of the 1986 total regional employment. This positive change is within the threshold values and, therefore, would not be considered significant.

4.3.4.4 Income

The realignment may result in a \$1.3 million annual increase in total regional salaries.

Annual RRAD expenditures for goods, services, supplies, and materials could increase by \$430,000. The regional sales volume could increase \$3.1 million annually. Of this total, \$1.5 million could be a primary impact and \$1.6 million could be a secondary impact. The increase in sales volume represents a change from the 1982 total regional sales of less than 1 percent.

Regional personal income could increase by \$1.7 million annually. This represents less than a 1-percent increase from the 1986 regional personal income and lies within the threshold values. Because of this, these effects would not be significant.

4.3.4.5 Housing

The realignment may result in an increase of 61 occupied housing units (43 owned and 18 rented units). This represents an increase of less than 4 percent of the 1994 projected total year-round housing units and is not considered significant.

4.3 4 6 Schools

The number of children attending public schools could increase by 37. This represents a change of much less than 1 percent and is not significant because it would not significantly change the availability of classroom space, the classroom size, or the teacher-pupil ratios.

4 3 4 7 Transportation

According to the March 1990 DA Execution Plan, RRAD's work force is 5,091 persons. This figure includes military, civilian, and tenant personnel. An increase of 61 spaces because of realignment would constitute a change of approximately 1 percent. The additional automobile traffic because of this change would be negligible and is therefore not significant. During FY 93, an average of two to three additional trucks and one to two additional railcars per week will arrive at RRAD with ammunition from PUDA. This is less than one truck or one railcar per day. The effects to transportation are considered insignificant.

4 3 4 8 Utilities

4 3 4 8 1 Red River Army Depot

- **Water Supply** Additional water requirements because of realignment are small. Inasmuch as RRAD water consumption has declined 5 to 10 percent per year during recent years, the additional demand from the realignment can be met by existing supplies and, therefore, does not constitute a significant impact.

- **Sewage Treatment** No major increase in wastewater is anticipated as a result of realignment. The sewage treatment plant has operated at approximately one-third of its permitted discharge capacity in recent

years; any increase because of realignment would be small and well within the plant's capacity. Therefore, impacts would not be significant

- **Energy** No major new energy consumption is likely because of the realignment. No significant impact is anticipated

4.3.4.8.2 Area Communities

- **Water Supply.** Increased population in the cities of New Boston and Texarkana as a result of the realignment will have minimal effect on the area water system because there is ample supply and treatment capacity to accommodate likely population increases.

- **Sewage Treatment** The increased population in New Boston and Texarkana resulting from the realignment would have a minimal effect on the sewage treatment facilities in these cities because there is currently sufficient treatment capacity to accommodate any likely increase. Existing problems caused by stormwater runoff that gets into the Texarkana sewer system and results in treatment plant bypasses will not be significantly increased because storm runoff is essentially independent of small population changes.

4.3.5 Hazardous and Toxic Wastes, Installation Restoration Program

The IRP is scheduled to continue after realignment. The planned transfer of conventional ammunition for storage (rather than targeted for demilitarization) as a result of the PUDA realignment should have no significant impact on either the IRP investigations or the remediation activities.

4 3 6 Hazardous Waste and Material Management Program

The transfer of cluster bombs from PUDA to RRAD for storage represents a 30-percent increase in existing stocks. The increase will not require construction of additional storage facilities. RRAD ammunition storage areas are currently operating under their capacity and will easily accommodate the transferred ammunition. Because cluster bombs are currently stored at RRAD, no change in the existing handling or storage procedures will be required.

Incidental demilitarization associated with long-term storage of ammunition may also be increased by as much as 30 percent with the transfer of the cluster bombs for storage at RRAD. The current interim status for demilitarization, OB/OD, includes detonation of cluster bombs at RRAD. However, the increase in potential munitions for incidental demilitarization may require a modification to the permit application, although the type of munition does not change and the feed rate of the process or design capacity remains constant.

Open detonation has no residuals associated with demilitarization that require storage and disposal as hazardous waste. Open burning and incineration does have hazardous waste residuals associated with the operation. Waste generated as a result of the increase in ammunition storage requirements is not significant because of the amount of waste generated from other operations on the depot, therefore, hazardous waste storage and disposal will be minimally affected by the realignment.

4 3 7 Mitigation

The realignment action would not cause any significant impacts to the environmental resources at RRAD. Also, because no new construction is

planned at RRAD as part of this action, none of the existing wetlands would be affected. Therefore, no mitigation is required

Realignment would have no significant impacts on identified and/or suspected waste areas, SWMU's, or the susceptibility of the public and the environment to uncontrolled waste areas. As stated in the Affected Environment section, the investigation and remediation of RRAD is an ongoing mission. Realignment and the subsequent transfer of conventional ammunition are unlikely to impact the IRP. Therefore, no mitigative actions are required.

The hazardous material management program, as stated earlier, has no identified significant impacts associated with material transfer and storage as a result of realignment. Therefore, no mitigative actions are required.

4.4 OTHER INSTALLATIONS

Information on the impacts at ANAD as a result of construction activities to house the Army historical property and the IGU is provided. Information on the HTW and the air quality at SIAD is also provided. Additionally, HTW and air quality impacts at the installations receiving smaller amounts of ammunition for demilitarization, as discussed in section 3, are addressed.

4.4.1 Anniston Army Depot

4.4.1.1 Physical Environment

The physical environment at ANAD could experience some relatively minor impacts from the construction of the two new facilities. The proposed construction area for the historical artifacts storage facility

is occupied by a housing project that has been vacated and will be demolished. The site of the new IGU facility is presently used as an outside storage area for tank parts. During construction, there would be temporary effects such as (1) soil disturbances, (2) increased levels of airborne contaminants from vehicular activity, and (3) noise increases. None of these temporary effects are considered significant. Best engineering practices, as well as State standards, would be implemented during construction.

4 4 1 1 1 Air Quality

As a result of realignment, an additional 100 tons of ammunition will be added to long-term storage at ANAD. This is less than a 0.1-percent increase over the 210,000 tons present in September 1990 (Joint Ordnance Command Group Storage Management Handbook, storage as of 30 September 1990, AMCCOM, Rock Island, Illinois, November 1990). This level of increase in long-term storage will cause a negligible increase in incidental ammunition demilitarization activities at ANAD and is not considered significant.

Construction of the IGU and historic artifacts facilities will temporarily affect air quality around the construction sites. Emissions from the operation of gas- and diesel-powered vehicles and construction equipment will occur. An increase in the temporary level of particulate matter as a result of construction activity is also likely. Neither the motor vehicle emissions nor the total suspended particulate matter is likely to greatly affect air quality. The impacts at both construction sites are not considered significant.

The IGU facility will be heated by a 1.5 MBTU oil-fired boiler. The boiler will use either low sulfur oil or natural gas. Either will result in very low emissions. The boiler will require an air emissions permit.

from the Alabama Department of Environmental Management. The emissions from the boiler will be regulated according to the State air quality parameters and are not considered significant.

The Army historic artifacts facility will be heated and air conditioned by a 60-ton self-contained unit. No air quality impact is expected as a result of the installation or use of this unit.

The IGU facility will house a sonic cleaner that involves the use of a closed loop freon system. Because of the effect that freon has on the earth's ozone layer, care must be taken to ensure that no freon escapes either in handling or in use. No significant air quality effects are likely, provided the freon is managed properly.

4.4.1.2 Biological Resources

Some loss of vegetation, none of which is threatened or endangered, would occur because of planned construction to house the Army historic artifacts and the IGU being transferred from PUDA. However, given the small areas involved, the previous disturbance of the areas, and the limited use of the areas by wildlife, this impact is considered insignificant.

4.4.1.3 Cultural Resources

The area of the proposed IGU facility was surveyed in December 1989 by an archeologist from the USACE Mobile District and no cultural resources properties were discovered. In a letter dated 19 January 1990, the Alabama SHPO concurred with a determination that no cultural resources would be affected by the project. The area of the proposed Army historic artifacts facility will be surveyed by a qualified archeologist prior to

construction The results of that survey will be coordinated with the Alabama SHPO

4 4 1 4 Socioeconomic Resources

4.4 1 4 1 General

The impacts to population, employment, and income were identified by entering the number of people involved in the realignment into the EIFS model Estimated changes in population, employment, and income were provided by the EIFS model These estimated changes were then compared to the RTV (expressed as positive RTV and negative RTV)

Using the RTV method, the impacts to population, employment, and income were considered significant if the change due to the realignment was greater than or less than the positive and negative RTV's, respectively

The RTV's for population, employment, and income for ANAD are presented in table 4-13

Table 4-13
ANAD
Rational Threshold Values

<u>Category</u>	<u>Positive RTV</u> (percent)	<u>Negative RTV</u> (percent)
Population	4 408	1.127
Employment	3 466	3.904
Income	4 410	4 419

Source Corps of Engineers Research Laboratory, Economic Impact Forecast System, 1989

Impacts to housing and schools were identified by entering the number of people involved in the realignment into the EIFS model. Data from the Bureau of Economic Development and Regional Economic Information System provided projections for the number of housing units which were then compared to the estimates of changes due to the realignment

The realignment will cause no changes in population, housing, or the number of school children

As a result of realignment-associated construction, primary and secondary impacts could result in an increase in regional employment of 55 full-time jobs. The increase is less than 1 percent and lies within the threshold values. This impact is temporary and is not considered significant.

Regional personal income may increase by \$762,000 annually. This represents a change of less than 1 percent in personal income and lies within the threshold values. Therefore, the impact is not considered significant.

4.4.1.4.2 Transportation

A small amount of increased truck and rail traffic would occur at ANAD as a result of realignment activities. A total of 1,000 short tons of ammunition, artifacts, and equipment would be transported from PUDA to ANAD. This would require an additional 20 truck and 10 railcar trips to the depot. This small number of additional trips would have a negligible effect on traffic and is therefore considered insignificant.

4 4 1 4 3 Utilities

- **Water Supply** Neither the IGU facility nor the Army historic artifacts facility requires the use of unusual amounts of water. Water uses include domestic uses at both facilities, boiler blowdown at both facilities, and sonic cleaning baths at the IGU facility. The existing water supply is sufficient to accommodate these added uses and does not constitute a significant impact.

- **Sewage Treatment** Wastewater and boiler blowdown water from both facilities will be discharged to the depot's sanitary system. These discharges are not likely to require a change in the NPDES permit because the system is currently operating below capacity. Therefore, impacts would not be significant.

- **Energy** The amount of fuel oil or natural gas required to heat the building housing the IGU is small when compared to overall depot requirements. Energy demands are negligible and are not considered significant. The same is true for the electric power required by the 140-ton air conditioner proposed for the IGU facility and the 40-ton unit proposed for the Army historic artifacts facilities. No significant impacts are anticipated.

4.4 1 5 Hazardous and Toxic Wastes

The IGU mission at PUDA is scheduled to be transferred to ANAD. The construction site for the IGU facility was carefully located in a clean location to prevent conditions which would require disturbance of any hazardous waste. The construction site category as defined in AR 210-20 and AMC guidance is a Category I. No waste removal activities, waste handling for construction personnel, or chemical sampling is expected during construction. Cost impacts associated with HTW will be negligible.

There are no adverse impacts expected with the siting or the construction of the IGU facility at ANAD. All required site investigations have been performed to ensure that the IGU facility is on a clean site.

A part of the depot has been placed on the NPL, but this does not affect the IGU facility siting. Therefore, there is no adverse impact as a result of the transfer of the IGU to ANAD. Care has been taken to define contaminated areas accurately, this allows for construction sites to be chosen to minimize impact during construction.

Army historic artifacts will also be transferred from PUDA to ANAD. The proposed location for the facility to house the artifacts is a vacant housing project which will be demolished. This area has not been documented as having had releases of or been contaminated with hazardous wastes, nor is this area included in the Southeast Industrial Area specified in the interagency agreement. Wastes associated with construction and demolition include building debris and asbestos. Asbestos will be bagged and disposed in the asbestos landfill. Other construction debris will be disposed in a sanitary landfill. Safety and handling will be in accordance with applicable State and Federal requirements. No significant impact is anticipated for this specific construction activity.

Munitions transferred to ANAD as a result of realignment include 100 short tons of ammunition for long-term storage. This transfer represents a 0.1-percent increase in existing munitions storage. The increase should not result in any significant impacts to the ammunition storage mission.

4.4.1.6 Mitigation

The realignment action would not affect existing wetlands or other important environmental attributes on ANAD because the proposed

construction sites for the IGU facility and the building to house the historical property will be located in already developed areas

4 4 2 Sierra Army Depot

4 4 2 1 Hazardous and Toxic Wastes, Installation Restoration Program

Detailed investigation and remediation activities currently planned for SIAD are discussed in section 3. The realignment of PUDA and the subsequent transfer of conventional ammunition to SIAD should not have a significant impact on the waste areas at SIAD, nor should they affect the IRP. However, demilitarization activities planned for the conventional ammunition scheduled for transfer from PUDA may have an effect by adding to the existing contamination at the burning grounds. This would not be a significant impact.

4 4 2 2 Hazardous Waste and Material Management Program

4 4 2 2 1 Hazardous Waste

Approximately 6,900 tons of cluster bombs are projected for transfer from PUDA to SIAD for demilitarization. Cluster bomb demilitarization is an ongoing mission function at SIAD, and the proposed transfer represents a 2-percent increase in existing activities. Under RCRA interim status regulations for OB/OD, 10,000 pounds of munitions may be detonated in each of 14 pits on 7 days a week. The increase in demilitarization as a result of realignment should have no significant impact on the design capacity or waste type specified in the permit application.

SIAD has recently halted scheduled cluster bomb demilitarization. The physical limitations of the nature of cluster bomb detonation have created unique problems at SIAD, and a moratorium has been issued for all cluster

bomb demilitarization activities Surface detonation, rather than subsurface detonation, has caused bomblets to be scattered beyond the depot's boundary during detonation activities. Trial testing for cluster bomb detonation is currently being performed by AMC, more effective controls for the activity will result. The planned transfer of the cluster bombs is not anticipated to impact conventional ammunition storage capacities at SIAD during the period required to correct the detonation design.

Waste generation activities at the depot may increase because of the demilitarization of transferred munitions SIAD does not currently have interim or permit status for hazardous waste storage, and contracted waste disposal rather than waste storage will increase Residuals accumulated from demilitarization activities, metal casings, and explosive-contaminated ash are currently disposed of through DRMO. However, these residuals are anticipated to account for only a 2-percent increase as a result of realignment. Therefore, there are no anticipated impacts on existing waste disposal capabilities as a result of realignment

4.4.2.2.2 Hazardous and Toxic Materials

Although the conventional ammunition storage planned for SIAD as a result of realignment may affect existing storage capacities, no construction or renovation will be required to accommodate the material SIAD currently accepts munitions for demilitarization and storage annually in excess of the 6,900 tons to be transferred from PUDA

Realignment should have no impact on UST's or PCB transformers and PCB storage areas No new construction or renovation will occur as a result of transfers to SIAD.

4 4 2 3 Air Quality

SIAD currently has a permit for OB/OD demilitarization of cluster bombs. The permit does not limit the quantity of bombs that can be demilitarized. Large quantities of cluster bombs have been demilitarized at the depot in the past without significantly deteriorating area air quality. Demilitarization of 6,900 tons of cluster bombs is in line with the existing capabilities of the depot, and no significant adverse impacts to air quality are likely as a result of this activity.

4 4 2 4 Mitigation

Realignment would have no significant impact on identified and/or suspected waste areas, SWMU's, or the susceptibility of the public and the environment to uncontrolled waste areas. As stated in the Affected Environment section, the investigation and remediation of SIAD is an ongoing mission. Realignment and the subsequent transfer of conventional ammunition are not likely to impact the IRP. Therefore, no mitigative actions are required.

The hazardous material management program, as stated earlier, has no identified significant impacts associated with material transfer and storage as a result of realignment. Therefore, no mitigative actions are required.

4 4 3 Ammunition-Receiving Installations (Air Quality)

4 4 3 1 Navajo Depot Activity

Navajo Depot Activity is scheduled for closure prior to 30 September 1995. Over the next 4 years, unserviceable ammunition will be demilitarized at the installation. The peak annual demilitarization

period is during FY 92, when 8,000 tons of ammunition are scheduled for demilitarization. This is 2,500 tons less than the quantity permitted by the Arizona Department of Environmental Quality in 1990 (Draft Environmental Impact Statement, Base Realignment and Closure, Fort Wingate Depot Activity, Navajo Depot Activity, Umatilla Depot Activity, Hawthorne Army Ammunition Plant, Department of the Army, U S Army Materiel Command, September 1990). The addition of 117 tons of 90 mm shells to the amounts already scheduled for demilitarization at the installation is small and will not adversely affect air quality in a significant manner.

4.4.3.2 Crane Army Ammunition Activity

Air emissions at Crane Army Ammunition Activity as a result of the demilitarization of white phosphorus are so slight that an emission permit is not required. Because these emissions are so slight, no significant air quality impact is anticipated as a result of the realignment of PUDA.

4.4.3.3 McAlester Army Ammunition Plant

The 105 mm smoke shells designated to be shipped to McAlester Army Ammunition Plant for demilitarization will be stored there. At a future date, they will be shipped to Pine Bluff Army Arsenal for demilitarization (telephone conversation with staff, AMCCOM, Rock Island, Illinois, January 1991). Because of the very small amount of ammunition stored, less than 1 ton, no air quality effects are anticipated at the installation.

The plant will receive an additional 7,600 short tons of ammunition as a result of realignment. This constitutes an increase of 1.8 percent over the 415,000 tons on hand on 30 September 1990. This small increase in long-term storage would have little effect on demilitarization activities, and air quality impacts are considered insignificant.

4.4 3 4 Long-Term Storage - Miscellaneous Locations

An additional 3,700 short tons of ammunition designated for long-term storage will be shipped to Hawthorne Army Ammunition Plant as a result of realignment. This constitutes an increase of 0.9 percent over the 420,000 short tons on hand on 30 September 1990. This small increase in long-term storage would have little effect on demilitarization activities, and air quality impacts are considered insignificant.

Seneca Army Depot will receive an additional 2,500 short tons of ammunition designated for long-term storage as a result of realignment. This amount constitutes an increase of 3.1 percent over the 81,000 tons on hand on 30 September 1990. This small increase in long-term storage would have little effect on demilitarization activities, and air quality impacts are considered insignificant.

4 4 4 Ammunition-Receiving Installations (Hazardous and Toxic Wastes)

The quantity of materiel being transferred to Navajo Depot Activity, McAlester Army Ammunition Plant, and Crane Army Ammunition Activity is small when compared to that transferred to TEAD and SIAD, and the demilitarization required is within the existing mission functions of those installations.

Because the installations already perform demilitarization of the specified transfer items, it is assumed that these activities are currently covered under existing RCRA interim status for treatment, storage, and disposal of these specific items. Changes to permit applications could be required if quantities of materiel for treatment exceed the design capacity of the treatment system or the quantities specified by the Part A application. Because quantities of munitions

being transferred to the above installations are small, it is assumed that, regarding feed rate for treatment, the impacts could be negligible

4.4.4.1 Navajo Depot Activity

Navajo Depot Activity has RCRA interim status for the 90 mm deactivation assembly line, and stocks currently held at the installation for demilitarization are nearing depletion. The transfer of 117 tons of 90 mm ammunition from PUDA is anticipated to have a negligible impact on the current operating conditions or the RCRA interim status requirements at the installation. Further information regarding storage, treatment, and disposal activities is provided in a separate EIS for the Hawthorne Army Ammunition Plant realignment.

4.4.4.2 McAlester Army Ammunition Plant and Crane Army Ammunition Activity

McAlester Army Ammunition Plant and Crane Army Ammunition Activity are Government-owned, Government-operated facilities that perform demilitarization of smoke and white phosphorus munitions. The small quantity of munitions being transferred, less than 1 ton, may be assumed to have no significant impact on current operating conditions at these installations.

4.5 NO ACTION

As indicated earlier, under the No Action alternative the existing conditions as described in section 3 would remain as described. There is one exception, and that is HTW. Under the No Action alternative, the present air, water, and land resources that are contaminated by existing HTW would gradually improve because of the Army's commitment and long-range plans to clean up these existing contaminated areas.

4 6 IMPACT CONCLUSIONS

4 6 1 Unavoidable Adverse Environmental Impacts

No anticipated unavoidable adverse environmental impacts would result from the realignment

4 6 2 Relationship Between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity

Implementation of the proposed action will result in minor short-term impacts to the socioeconomic, physical, and biological environment. In the long term, the realignment of the installations will add greater overall productivity through the gain of efficiencies. Energy conservation should increase as a result of the use of more energy-efficient designs in new construction.

4 6.3 Any Irreversible and Irretrievable Commitments of Resources Which Would Be Involved in the Proposed Action Should It Be Implemented

Implementation of the proposed realignment of PUDA will not result in any significant irreversible and irretrievable commitments of resources. The realignment of the four installations and associated construction will result in the commitment of resources, including the energy and other natural resources that are associated with the construction of new facilities and/or the renovation of existing facilities.

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8 - INDEX

<u>Subject</u>	<u>Section(s)</u>
Affected Environment	Section 4
Air Quality	3.1.3.6, 3.2.3.6, 3.3.3.6, 3.4.1.3 6, 4 1.1 1, 4.2.1 1, 4.3.1.1, and 4 4 1 1 1
Alternatives Considered	Section 2
Anniston Army Depot	3 4 1 and 4 4 1
Biological Resources	3 1.4, 3 2 4, 3 3 4, 3 4 1 4, 4 1 2, 4 2 2, 4 3 2, and 4 4 1 2
Climate	3 1.3 2, 3 2 3 2, 3 3 3 2, and 3.4.1 3 2
Comments and Responses	Appendix E
Crane Army Ammunition Activity	3.4 3 3, 4 4 3 2, and 4 4 4 2
Cultural Resources	3.1.5, 3.2 5, 3.3 5, 3 4 1.5, 4.1.3, 4.2 3, 4.3 3, and 4.4 1.3
Distribution List	Section 7
Employment	3.1.6 2, 3.2 6 2, 3 3 6 2, 4.1.4.3, 4 2.4 3, and 4.3 4.3
Environmental Consequences	Section 4
Fort Belvoir	1.0 and 2 1 2 2
Fort Carson	1.0 and 2 1 1
Ground Water	3 1.3 4 2
Hazardous and Toxic Wastes	3.1 7, 3.1 8, 3 2.7, 3 2 8, 3.3 7, 3.3 8, 3 4 1.7, 3 4.2 1, 3.4.2.2, 4 1 5, 4 1.6, 4.2 5, 4.2.6, 4.3 5, 4.3.6, 4 4 1 5, 4.4.2.1, and 4 4 2 2
PUEBLO-EIS(08/91)	8-1

<u>Subject</u>	<u>Section(s)</u>
Housing	3 1.6 4, 3.2 6 4, 3 3 6 4, 3.4.1.6 1, 4 1 4 5, 4 2 4.5, and 4.3.4 5, 4 4.1 4.1
Income	3 1.6 3, 3.2 6 3, 3.3.6 3, 3 4.1.6.1, 4 1.4.4, 4.2.4.4, 4 3 4.4, and 4.4 1.4.1
List of Preparers	Section 5
McAlester Army Ammunition Plant	1 0, 3 4 3.4, 4 4.3 3, and 4 4 4 2
Mitigation	4 1.7, 4 2.7, 4.3 7, 4 4.1.6, and 4 4 2 4
Navajo Depot Activity	1 0, 3 4 3.1, 4 4.3.1, and 4 4 4.1
No Action	2 0, 2 2, 2 3 1, and 4 5
Noise	3 1 3 5, 3 2 3 5, 3 3 3.5, and 3 4 1 3 5
Physical Environment	3 1 3, 3 2.3, 3 3.3, 3.4.1.3, 4 1.1, 4.2.1, 4.3.1, and 4.4.1.1
Physiography	3 1 3 1, 3.2 3 1, 3.3.3.1, 3.4.1 3 1
Population	3 1 6 1, 3.2 6 1, 3 3 6.1, 3.4.1.6 1, 4.1 4 2, 4.2.4.2, 4.3.4 2, and 4.4.1 4 1
Public Involvement	1 2 and Appendix A
Pueblo Depot Activity	3 1 and 4 1
Red River Army Depot	3 3 and 4.3
References	Section 6
Schools	3.1 6 5, 3 2 6 5, 3 3 6 5, 3 4.1 6 1, 4.1 4 6, 4 2.4.6, 4 3 4.6, and 4 4 1.4.1

<u>Subject</u>	<u>Section(s)</u>
Scoping	1.2 and Appendix A
Sierra Army Depot	1.0, 3.4 2, 3 4 3 2, and 4 4.2
Socioeconomic Resources	3 1 6, 3 2 6, 3 3 6, 3 4 1 6, 4.1 4, 4 2 4, 4 3 4, and 4 4 1 4
Soils	3 1 3 3, 3 2 3 3, 3 3 3 3, and 3 4 1 3 3
Tooele Army Depot	3 2 and 4 2
Transportation	3.1.6.6, 3 2 6 6, 3.3 6 6, 4.4.1.6.2, 4 1.4.7, 4.2.4.7, 4 3 4 7, and 4 4 1.4 2
Utilities	3.1 6 7, 3.2 6.7, 3.3.6 7, 3 4 1 6 3, 4 1 4.8, 4 2 4 8, 4 3 4 8, and 4 4.1 4 3
Wetlands	3 1 3.4 1, 3 2 3 4, 3 3 3 4, 3 4.1 3.4, 4 1 7, 4 2 7, 4 3 7, 4.4 1 6, and 4.4.2 4
Water Resources	3.1.3.4, 3 2 3 4, 3.3 3 4, and 3.4.1 3 4
White Sands Missile Range	1 0 and 2 1.2 2

APPENDIX A

PUBLIC INVOLVEMENT

AND

NOTICE OF INTENT

PUBLIC INVOLVEMENT AND THE SCOPING PROCESS

INTRODUCTION

In accordance with Council on Environmental Quality regulations for implementing the National Environmental Policy Act (NEPA), the scoping process was initiated with the publication of a Notice of Intent to prepare an environmental impact statement (EIS) for the realignment of Pueblo Depot Activity, Colorado, in the Federal Register on 8 February 1989. Following this action, the U S Army Corps of Engineers conducted public scoping meetings. Announcements of the meetings were mailed to approximately 250 people. Meetings were conducted in Pueblo, Colorado, Tooele, Utah, and Texarkana, Texas.

A Draft EIS was completed and circulated for review and comment to Federal, State, and local agencies and to interested individuals on 30 May 1991 for a 45-day comment period. A notice of document availability also appeared in the Federal Register on that date. A public meeting was held in Pueblo, Colorado, on 26 June to receive both oral and/or written comments on the Draft EIS. A copy of the transcript of that meeting is located at the end of this appendix.

SCOPING ISSUES

The purpose of the scoping meetings was to receive input and comments from interested parties about issues they believed should be considered and addressed in this EIS. A summary of the scoping issues identified at the three scoping meetings is presented in the following paragraphs. The scoping issues identified in each summary are addressed throughout this

document and are keyed to the Table of Contents. The most appropriate sections relating to the area of concern are identified after each topic.

Pueblo Depot Activity

A scoping meeting was held on the campus of the University of Southern Colorado at Pueblo on the evening of 7 June 1989. Approximately 30 people attended. Most attendees were persons working at the Pueblo Depot Activity (PUDA) who had concerns about their future. The two main concerns were the following:

- The effects of the realignment and closure of PUDA on jobs, and
- The reuse of the property following realignment.

The Socioeconomic Resources section (4.1.4) discusses job impacts associated with the realignment. Closure and reuse are not addressed in this EIS because the Army has no immediate plans to close or dispose of PUDA property. Possible reuses would be discussed in a separate NEPA document if PUDA were to be closed. Other concerns expressed are identified below.

- The relationship between ongoing chemical demilitarization (CHEM DEMIL) activities and the base realignment and closure (BRAC) action. (Commission Recommendations - section 1.0)

- Economic, social, and environmental impacts to the community. (Biological Resources - section 4.1.2; Socioeconomic Resources - section 4.1 4)

- Timetables for realignment of missions at PUDA. (Stock Movement and Disposal Summary - section 2.1.3)

- Availability of depot lands (quantities, cost, timetables) (Refer to above discussion)

- Responsibilities for cleanup of hazardous and toxic waste (HTW) sites (Hazardous and Toxic Wastes, Installation Restoration Program - section 4 1 5, Hazardous Waste and Material Management Program - section 4.1 6)

Tooele Army Depot

A scoping meeting was held at the Tooele Senior Citizens' Center in Tooele on the evening of 6 June 1989 Six people attended They represented the depot, Senator Orrin Hatch, and environmental interests The few concerns expressed are identified below Presently, there are no known areas of controversy

- The relationship between ongoing CHEM DEMIL activities and the BRAC action (Commission Recommendations - section 1 0)

- Effects of realignment on environmental cleanup of any HTW sites (Hazardous and Toxic Wastes, Installation Restoration Program - section 4 2.5, Hazardous Waste and Material Management Program - section 4 2 6)

- Effects of realignment on jobs (kinds, skills, and so forth) (Socioeconomic Resources - section 4 2 4)

Red River Army Depot

A public scoping meeting was held at the Southwest Center in Texarkana on the evening of 8 June 1989 Five persons attended Because RRAD is a receiving depot and the change in personnel and mission will be small,

expected impacts are considered to be insignificant. The concerns expressed are identified below.

- Effects of the new mission on jobs (Socioeconomic Resources - section 4.3.4)

- Extent of the effects on the kinds of jobs and skills needed for the new mission (Socioeconomic Resources - section 4.3.4)

- Effects of the BRAC action and the continuing depot activities on any and all threatened and endangered species (Biological Resources - section 4.3.2)

PUBLIC MEETING ISSUES

The letters received in response to circulation of the Draft EIS, as well as comments received at the public meeting, are reproduced in appendix E. Responses to these comments are also included in that appendix. The major issues identified concerned reuse and/or disposal of PUDA property, hazardous and toxic wastes (PUDA's ranking on the National Priorities List and asbestos abatement/removal), and socioeconomics (economic resilience of the City of Pueblo and the housing market in Pueblo).

Department of the Army

Intent to Prepare Environmental Impact Statements for the Army's Base Realignment and Closure Actions

AGENCY: Department of the Army, DOD.

ACTION: Notice of intent to prepare environmental impact statements for the Army's Base Realignment and closure actions.

SUMMARY: The Defense Secretary's Commission on Base Realignment and Closure was chartered on May 3, 1988 to recommend military installations within the United States, its commonwealths, territories, and possessions for realignment and closure. The Congress and the President subsequently endorsed this approach through legislation, the Base Closure Realignment Act, Title II, Public Law 100-526. The Commission's report presented to the Secretary of Defense on December 29, 1988, effects approximately 111 Army installations. Pub. L. 100-526 exempted the actions of the Commission from the provisions of the National Environmental Policy Act of 1969 (NEPA) in their decision making process for recommending bases to be closed or realigned. The Army, however, will prepare environmental impact analyses required by NEPA for the implementation of proposed actions involving Army installations. Implementation of these actions will occur only after review and approval by the U.S. Congress.

SCOPING: The Army will conduct scoping meetings to aid in determining the significant issues for each of the actions requiring an environmental impact statement and in special cases for actions requiring an environmental assessment. The public, as well as federal, state, and local agencies are encouraged to participate in the scoping process by submitting data, information, and comments identifying relevant environmental and socioeconomic issues and potential future uses of the excessed real estate that would assist the Army in analyzing potentially significant impacts. Useful information includes other environmental studies, published and unpublished data, and

possible mitigation measures associated with the proposed action.

Individuals and agencies may offer information or data relevant to the environmental or socioeconomic impacts by attending public scoping meetings that will be announced in the local media of the affected installation or by writing James B. Hildreth: Assistant Chief, Planning Division: U.S. Army Corps of Engineers District, Mobile; P.O. Box 2288; Mobile, Alabama 36628-0001. The scoping meetings are planned to begin within the next two months. Comments, suggestions, and requests to be placed on the mailing list for announcements should be sent to Mr. Hildreth at the above address.

Addressing the cumulative impacts as required by the Presidents Council on Environmental Quality regulations will be accomplished by grouping the mutually affected losing and/or gaining installations into a package for the purpose of preparing the analyses and documentation required by NEPA. The Army intends to prepare an EIS for each of the following packages of proposed actions:

A. U.S. Army Materiel Technology Lab, Massachusetts

- Transfer Corrosion Research to Fort Belvoir, Virginia
 - Transfer Metals Research to Picatinny Arsenal, New Jersey
 - Transfer Ceramic Research to Detroit Arsenal, Michigan
- A scoping meeting will be held in Watertown, MA.

B. Fort Belvoir, Virginia

- Receive activities from the closure of Cameron Station, Virginia
- Receive Corrosion Research from closure of U.S. Army Materiel Technology Lab, Massachusetts
- Receive Criminal Investigation Command from Fort Meade, Maryland and from leased space in northern Virginia
- Receive Criminal Records Center from Fort Holabird, Maryland
- Transfer the Information Systems Command to Fort Devens, Massachusetts
- Receive Headquarters, U.S. Army Materiel Command (This is not a part of base closure. It is a separate ongoing action at Fort Belvoir).

A scoping meeting will be held in the northern Virginia area at a location convenient to both Fort Belvoir and Cameron Station.

C. Fort Devens, Massachusetts

- Transfer the Intelligence School to Fort Huachuca, Arizona

- Receive a portion of the Information Systems Command from Fort Monmouth, New Jersey

- Receive a portion of the Information Systems Command from Fort Huachuca, Arizona

- Receive a portion of the Information Systems Command from Fort Belvoir, Virginia

Scoping meetings will be held near Fort Huachuca, Arizona, and Fort Devens, Massachusetts.

D. Fort Dix, New Jersey

- Transfer a segment of Basic Training and Air Base Ground Defense Training to Fort Knox, Kentucky
- Transfer a segment of Basic Training to Fort Leonard Wood, Missouri
- Transfer a segment of Basic Training to Fort Jackson, South Carolina
- Transfer Light Wheel Vehicle Mechanic Advanced Individual Training from Fort Dix and Fort Leonard Wood to Fort Jackson
- Transfer Food Service Advanced Individual Training from Fort Dix and Fort Jackson to Fort Lee, Virginia
- Transfer Motor Vehicle Operator Advanced Individual Training to Fort Leonard Wood

- Transfer Basic Training at Fort Bliss, Texas to Fort Jackson

- Transfer Administrative and Legal Specialist Advanced Individual Training from Fort Benjamin Harrison, Indiana to Fort Jackson

- Transfer Personnel Specialist Advanced Individual Training from Fort Jackson to Fort Benjamin Harrison

- Transfer Supply Specialist Advanced Individual Training from Fort Jackson to Fort Lee

Scoping meetings will be held at locations near Forts Dix and Jackson.

E. Fort Douglas, Utah

- Transfer Reserve Component Pay Input Station to Fort Carson, Colorado
- Segregate and retain a portion of Fort Douglas for Reserve Component activities

- Transfer other activities to leased space in Salt Lake City, Utah

A scoping meeting will be held near Fort Douglas.

F. Hawthorne Army Ammunition Plant, Nevada

- Receive activities from the closure of Fort Wingate, New Mexico

- Receive the Ammunition Storage mission the closure of Navajo Depot Activity, Arizona

- Receive the Conventional Ammunition Storage mission from the

**closure of Umatilla Army Depot,
Oregon**

Scoping meetings will be held at locations near each of the four affected installations.

G. Jefferson Proving Grounds, Indiana

—Transfer activities to Yuma Proving Grounds, Arizona

A scoping meeting will be held near Jefferson Proving Grounds.

H. Lexington Army Depot, Kentucky

—Transfer the Supply and Material Readiness mission to Letterkenny Army Depot, Pennsylvania

—Transfer the Communications-Electronics mission to Tobyhanna, Pennsylvania

—Transfer the Test Management mission to Redstone Arsenal, Alabama

A scoping meeting will be held near Lexington Army Depot.

I. Fort Meade, Maryland

—Transfer the Criminal Investigation Command to Fort Belvoir, Virginia

A scoping meeting will be held near Fort Meade.

J. Presidio of San Francisco, California

—Transfer Sixth Army Headquarters to Fort Carson, Colorado

—Transfer the Letterman Army Medical Center to the Force Structure (i.e., the Center will be assimilated throughout the Army)

—Transfer the Letterman Army Institute of Research to Fort Detrick, Maryland

A scoping meeting will be held near the Presidio.

K. Pueblo Army Depot, Colorado

—Maintain Chemical Demilitarization mission until complete

—Transfer the supply mission to Tooele Army Depot, Utah

—Transfer the ammunition mission to Red River Army Depot, Texas

Scoping meetings will be held at locations near Pueblo Army Depot and Tooele Army Depot.

L. Fort Sheridan, Illinois

—Transfer Fourth Army Headquarters and the U.S. Army Recruiting Command to Fort Benjamin Harrison, Indiana

—Transfer miscellaneous tenants to leased space in the Chicago area.

—Segregate and retain a portion of Fort Sheridan for Reserve Component activities

Scoping meetings will be held near Fort Sheridan and Fort Benjamin Harrison.

The scoping process is the initial exploration and identification of

relevant environmental issues to be considered in the environmental impact analyses. As the process evolves it may become beneficial to either the Army or the public to conduct additional meetings. All future meetings will be advertised in the local media of the affected installation.

Draft EISs on each of the above packages are expected to be available to the public in early 1990. Comments received on the Draft EIS will be considered in the preparation of the Final EIS. Persons desiring to be placed on a mailing list to receive Draft EISs should contact Mr. Hildreth at the above address.

May 3, 1989.

Lewis D. Walker,

*Deputy Assistant Secretary of the Army
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[FR Doc. 89-10929 Filed 5-5-89; 8:45 am]

BILLING CODE 3710-06-M

1
2
3 PUBLIC MEETING
4 26 JUNE 1991
5 7:00 P.M.
6 PUEBLO COMMUNITY COLLEGE
7 PUEBLO, COLORADO

8 DRAFT
9 ENVIRONMENTAL IMPACT STATEMENT

10 REALIGNMENT OF
11 PUEBLO DEPOT ACTIVITY, COLORADO
12 WITH TRANSFERS TO
13 TOOELE ARMY DEPOT, UTAH
14 AND
15 RED RIVER ARMY DEPOT, TEXAS

16 APPEARANCES: LTC JOHN RICKMAN
17 Commander
18 Pueblo Depot Activity

19 COLONEL STEWART BORNHOFT
20 District Engineer
21 Corps of Engineers

22 GERARD MICK
23 Omaha District
24 Corps of Engineers
25

COPY

1 LTC RICKMAN: Everyone that is here knows
2 me, so I won't dispense with introducing myself.
3 What I would like to do is introduce the folks that
4 are here; and since we have so few, I'll probably run
5 right down the list. I'll start with depot
6 personnel, and we do have Chet Tudor, my Civilian
7 Executive Assistant.

8 Working across from front to back, we have
9 Pat Steranka, our Safety Officer; Debbie Rowell, who
10 is our Chief of Engineering and Logistics Division;
11 D. R. Duncan, who is one of our environmental
12 coordinators, works in the inspection room for us.
13 We have Malcolm Walden, who is the base realignment
14 and closure representative from Tooele Army Depot;
15 our headquarter's major, Major O'Brien is here from
16 AMC. She is the base realignment closure
17 representative that deals with a lot of Pueblo issues
18 at the Army material command level. Then we have Jim
19 Provost, who is our Force Modernization Officer and
20 works base realignment issues in Pueblo. David
21 Vigil, our Equal Employment Opportunity Officer, and
22 will eventually take over Jim's job later this
23 summer. Curtis Turner, who is our environmental
24 supervisor coordinator. You name it, he does it for
25 us in the environmental arena. Marilyn Thompson, our

1 Public Affairs Officer. Ron Connell, our Resource
2 Manager, and Sergeant Major Ballinger, who is Post
3 Sergeant Major.

4 From the Corps of Engineers, we have a
5 couple of folks. Did Dan McGregor make it? I didn't
6 see him come in. He is from the Ft. Worth District
7 and works in the archeological arena. If he comes
8 in, we'll let you know who he is.

9 The rest of the folks all work out of the
10 Omaha District of the Army Corps of Engineers, and
11 I'll save their chief for last. I'll introduce him
12 to take your comments. We have Gary Mick, who is an
13 environmental resources specialist; and he's got
14 about 20 years of experience, a lot of that in
15 working with environmental impact statements. He is
16 the one who was charged with supervision of those who
17 actually put together the draft Environmental Impact
18 Statement on Pueblo Depot Activity's realignment.

19 Kettie Parks is standing in the door to the
20 back. Kettie, again, has got about 20 years
21 experience doing this type of work for the Corps of
22 Engineers and does a lot of water resource studies as
23 well. She is the one who is actually the author of
24 the Environmental Impact Statement.

25 We also have Debbie Brey, who is really a

1 writer and editor; and she was responsible for
2 editing the report. And I did find a typo I'll talk
3 to you about later.

4 We have Jeff Harp, who is a realty
5 specialist. Jeff is the interim Base Realignment
6 Closure Manager for the district office and has had
7 some input to the Environmental Impact Statement on
8 the real estate issues.

9 And last is Jean Sturm, who is an economist
10 from the Planning Division of the Corps; and Jean is
11 the one that put together a lot of the economic
12 impact that we have in the draft EIS.

13 Also with us from the U.S. Army Toxic and
14 Hazardous Materials Agency is Mike Voight. Mike is
15 representing the agency that is primarily responsible
16 for doing a lot of the research into the
17 environmental problems that we have. He, also, was
18 the project manager for the preliminary assessment
19 and the enhanced preliminary assessment that led to
20 the Environmental Impact Statement.

21 I might as well go ahead so that you know
22 who they are. We have Dennis Darrel from the Pueblo
23 Chieftan, and I still want to say Henderson.
24 Genevieve Anton from Colorado Springs Gazette
25 Telegraph. And from the County Commissioners, we

1 have Chuck Finley and Vickie Burkhardt. County
2 planning office; is that right, Vickie?

3 MS. BURKHART: That's correct.

4 LTC RICKMAN: And Kathy is our court
5 recorder. We are recording everything that is said
6 tonight for posterity. If she says "stop, what did
7 you say," please repeat yourself for her.

8 At this time, I'd like to introduce the
9 District Corps Engineer, which effectively is the
10 commander of the district. He will be the one
11 running the meeting tonight, as it is his meeting, to
12 accept your input to the Environmental Impact
13 Statements so that we can take those comments and
14 work them into the draft. I'd like to introduce
15 Colonel Stewart Bornhoft.

16 COL. BORNHOFT: Good evening. I am Colonel
17 Stew Bornhoft. I have the privilege of commanding
18 the Omaha District of the Corps of Engineers, and
19 that is the element of the Corps that has the
20 responsibility for preparing the EIS, Environmental
21 Impact Statement.

22 The draft Environmental Impact Statement,
23 which we're going to be talking about tonight,
24 focused chiefly on four factors at Pueblo and other
25 affected installations: The purpose and need for

1 proposed action, the environments affected, the
2 impacts of the proposed action, and finally the
3 measures for mitigation.

4 The purpose of this evening's meeting is to
5 give you, the public, the opportunity to provide your
6 comments on the findings of the draft EIS. You can
7 do so either verbally or in writing. Written
8 comments can be handed in as you came in, they can be
9 presented when you speak at the microphone, or they
10 could be handed in after the meeting. If you should
11 decide later that you want to amend those comments or
12 that you wish to make a written statement, you have
13 until July 15, 1991, to do so. Comments can be sent
14 to the Omaha District at the address that is listed
15 in the handout that you got.

16 As you provide your oral comments this
17 evening, please remember that the purpose of the
18 public meeting this evening is not to use it as a
19 forum for debating the Army's decision to realign
20 Pueblo Depot. The purpose of the meeting is to
21 receive your thoughts on the environmental, the
22 social, the economic and other impacts of this
23 realignment. We want to have the most complete
24 document possible. As Colonel Rickman said, it is
25 being recorded tonight; and that's in the interest of

1 accuracy.

2 The realignment was recommended in
3 December, 1988, by the Defense Secretary's Commission
4 on Base Realignment and Closure to consolidate supply
5 and ammunition functions within the Department of
6 Defense. Congress enacted the Commission's report
7 into law in the Defense Authorization Amendments and
8 Base Closure and Realignment Act, Public Law
9 100-526.

10 Now, our job at the Corps of Engineers is
11 to look at the environmental effects of the
12 realignment action as they apply to Pueblo. The
13 Corps' experience in preparing Environmental Impact
14 Statements led to this assignment.

15 The major components of the authorized
16 Pueblo realignment are: The transfer of the supply
17 mission from Pueblo to Tooele Army Depot in Utah;
18 transfer of the conventional ammunition mission from
19 Pueblo to the Red River Army Depot in Texas, and a
20 portion of the storage mission being transferred to
21 other installations; transfer of the Army historical
22 property to Anniston Army Depot, Alabama, and
23 transfer of the inertial guidance unit maintenance
24 mission to the Anniston Army Depot. That last part
25 may change as a result of new legislation or a DoD

1 consolidation of the maintenance programs.

2 As I said before, accuracy is of importance
3 to us tonight. The meeting is being recorded and all
4 of the comments, whether they are written or oral,
5 will be considered in the preparation of the final
6 EIS. We plan to conduct the meeting in two parts.
7 We'll begin with a staff presentation, which will
8 provide you with an overview of the Pueblo action,
9 plus provide some specific comments about potential
10 impacts as they were discussed in the draft EIS.

11 In the second part, I will ask for public
12 comment on the draft EIS. I will give the
13 opportunity first to any elected officials or their
14 representatives, if they should show up by that time,
15 and then to those of you who have indicated on the
16 attendance cards that you may have filled out at the
17 door that you wanted to make a statement. If you
18 didn't fill out one of those cards and still want to
19 do so, you can. It is important to us to have this
20 information. It gives us a record of your attendance
21 and your address so we can contact you, if necessary,
22 for any reason.

23 After hearing comments from all of those
24 who already indicated that they want to speak, if
25 anybody at that time decides they'd like to speak,

1 we'll give them an opportunity to do that as well.
2 This way everybody is assured of a chance to
3 comment.

4 When you come to the microphone or get
5 provided a microphone, we ask that you provide us
6 your name and who you represent or are speaking for.
7 Again, this is important. Otherwise, we have no way
8 of attributing your remarks on the record. Anonymous
9 remarks are kind of like anonymous letters. They're
10 not very helpful.

11 Also, if you're handing in a written
12 statement, I suggest that your oral statement be a
13 summary of those remarks. I can assure you that both
14 the written and the oral statements will be given
15 full consideration in preparing the final EIS.

16 Given the number of folks here, I suspect
17 that we will have time to listen to all of the
18 comments. Normally we would limit the time of that.
19 I think given the number of folks here, we will be
20 able to hear part of what it is you want to say.

21 We hope to have a transcript of the
22 proceedings of this meeting available by the 17th of
23 July. There's a contract that will call for it to be
24 produced by then, and a copy can be obtained for the
25 cost of the printing by writing to the address that

1 was provided in the handout. The transcript will
2 also be able for review at the Pueblo Depot
3 Activity.

4 What I'd like to do now is move on and
5 begin our meeting with a presentation by Gary Mick of
6 our Planning Division. He was in on the start of the
7 study, and he has intimate knowledge of it as well as
8 the National Environmental Policy Act on which the
9 study is being done.

10 I took over command of the District about
11 four months ago. I, personally, have not been to the
12 Pueblo site. I have received the command briefing.
13 This is a draft. This gives us an opportunity for me
14 to see what our folks, who have been working on this
15 in the various fields very hard to put that together,
16 to take the additional comments that you may provide
17 here to me and get those provided to me before we
18 finalize the EIS.

19 Gary will provide you an overview of the
20 EIS plus some comments on the findings. Gary.

21 MR. MICK: This is the document we're
22 talking about. This is the draft Environmental
23 Impact Statement. I trust all of you have seen a
24 copy of it. If you haven't, we've got some copies
25 here and if we run out of those, we've got more back

1 at the office. We can give you one, if you'd just
2 write to us or let us know.

3 Some of you may recognize me. I was at the
4 public scoping meeting on June 6 of 1989, which was
5 our start in this whole process. The things that we
6 heard at that scoping meeting are some of the things
7 that we described as impacts and analyses in our EIS;
8 and one of our jobs is to make sure that everything
9 we heard at that particular meeting and since that
10 time, during that record of that meeting was held
11 open, was addressed in this document. And this is
12 kind of a test for us tonight and for the next couple
13 weeks that the processes remain open.

14 If, after reading this document, you find
15 out what you said at that meeting or things you said
16 weren't handled in here, you certainly better let us
17 know and we'll take care of them. As Colonel
18 Bernhoft said, we don't want to leave anything out.
19 We want to make sure the record is accurate.

20 Some of the things that the document
21 discusses -- it's described as a realignment action.
22 It's not a closure, but it's a realignment. It
23 basically involves transfer of the supply mission,
24 which is currently at Pueblo, to Tooele Army Depot in
25 Utah. It involves transfer of conventional

1 ammunitions storage to Red River Army Depot in
2 Texas. It involves historical property and inertial
3 guidance units transfer to Anniston Army Depot. This
4 may change. We're not sure about this yet, and there
5 are ten other installations which will receive
6 smaller amounts of material and/or spaces that are
7 currently at Pueblo. The chemical demilitarization
8 that's scheduled for the future at Pueblo prevented
9 the closure of Pueblo Army Depot Activity at this
10 time.

11 The next thing I'd like to talk about a
12 little bit is the manpower summary. Before
13 realignment, the current authorized manpower strength
14 at the Activity is 692. That includes 7 military and
15 685 civilian spaces. Of those, 198 are scheduled to
16 transfer to other activities -- to Tooele, Red River
17 and other places -- and 3 of those are military, 195
18 civilian spots. There will be 415 manpower spaces
19 eliminated as a result of this alignment. After
20 realignment, there would be 79 total spaces left to
21 perform certain missions that are left at the depot
22 activity, 4 military and 75 civilian.

23 The other impacts that we described in the
24 Environmental Impact Statement are basically broken
25 down into several areas; environmental, which we

1 describe basically as biological resources;
2 socioeconomic impacts; and impacts as a result of the
3 hazardous and toxic waste problems that we are aware
4 of at Pueblo Army Depot. Then we have a summary at
5 the end of that process. There's also a cumulative
6 impact summary within the document.

7 For instance, we talk about impacts to
8 physiography, the climate, the soils, water
9 resources, noise and air quality, flora and fauna,
10 which is the birds and the bees part of it, to
11 cultural resources, which includes some of the
12 historic buildings at the activity, and socioeconomic
13 resources, which includes population, employment,
14 impacts to income, to housing, to schools, to
15 transportation networks and to utilities and to
16 hazardous and toxic waste problems that may exist at
17 the depot.

18 I think the bottom line in the EIS is that
19 most of the impacts we found are not significant, and
20 that's a difficult term for people to grasp because
21 most of the time we talk about those kinds of impacts
22 being on a regional scale. And I think most people
23 tend to think in terms of more localized than we're
24 able to look at. If necessary, we can clarify some
25 of the reasons why we look at it on a particular

1 scale versus another scale and hope you understand
2 that a little bit better.

3 I really don't have anything else to say,
4 other than to -- well, let me just stop there. I'm
5 going to turn the meeting back over to Colonel
6 Bornhoft and he'll give you a chance to come up here
7 and express your concerns, and we're also available
8 to answer questions as they apply to things that are
9 in the Environmental Impact Statement. If you have
10 questions that we can help clarify, we'll certainly
11 try and do that. Thank you.

12 COL. BORNHOFT: We now want to hear from
13 you. As I mentioned, when you come to the
14 microphone, or better yet, when we hand you the
15 microphone -- you're welcome to remain seated if you
16 so desire -- we ask that you state your name and whom
17 you represent. And we will begin with our first
18 speaker. I think the button is on the bottom.

19 MR. FINLEY: My name is Chuck Finley,
20 Director of the Department of Planning and
21 Development, Pueblo County, Colorado. Also with me
22 is Vickie Burkhardt, Environmental Planner.

23 We are not making a statement on behalf of
24 Pueblo County, but we did bring with us this evening
25 a couple of inquiries, perhaps to clarify that which

1 is in the draft Environmental Statement.

2 The first inquiry relates to Page S-7.

3 There is a statement that asbestos abatement will be
4 carried out pursuant to standard Army procedures. We
5 do not know how standard Army procedures apply to
6 those facilities at Pueblo Depot Activity; whether
7 the word "abatement" is interchangeable with
8 "removal" or whether the word "abatement" has a
9 different definition under standard Army procedures
10 for asbestos. So we are asking for clarification as
11 to how those apply to Pueblo Depot Activity.

12 MR. MICK: I don't personally have
13 knowledge of that. Mike, can you respond to that?

14 MR. VOIGHT: In terms of asbestos
15 abatement, it would be removal; and in some cases
16 where you have a loose type of asbestos -- we're
17 talking about tiles, transite, that sort of thing, a
18 stable asbestos, we wouldn't, from a base closure
19 environmental standpoint, look at removal of that, as
20 long as it is in a satisfactory condition. If you
21 have pipe insulation, something like that, that's
22 visibly loose, that would definitely be what would be
23 removed.

24 MR. FINLEY: There seems to be a great deal
25 of asbestos between those two extremes. Let me offer

1 that asbestos which is flyable which is not visibly
2 loose. Would those be abated in a removal manner, or
3 would those be abated in a containment manner?

4 COL. BORNHOFT: Normally, we would not get
5 into an active dialogue. We would take what the
6 questions are and deal with those. Just so you get a
7 feel for what the scope of that is, if you could give
8 us all your questions and then depending upon what
9 the reaction is that Gary or his folks may have, we
10 may be able to, on the spot, address those. It may
11 be better to deal with that in a more formal manner.

12 MR. FINLEY: We were not anticipating
13 responses this evening.

14 On Page 1-3, there are two statements that
15 are accurately quoted from the Commission report, one
16 being that the Commission was prevented from closing
17 PUDA, and the second statement that the installation
18 is to be realigned to the maximum extent possible, to
19 facilitate closure as soon as possible as soon as the
20 chemical demil mission is completed.

21 The question that we would have is: First
22 of all, were these enacted by Congress or were they
23 strictly comments of the Commission, making the
24 distinction here between comments of the Commission
25 and that which Congress acted on. And the second

1 question that flows from that is whether or not the
2 findings and evaluations within the draft EIS are
3 based on either of these Commission statements.

4 Another question that we have relates to
5 Page 3-36. It speaks to the hazard ranking system
6 and indicates that a score higher than 28.5 places a
7 facility on the National Priorities List. The report
8 also indicates that Pueblo Depot Activity does not
9 have a ranking high enough to be on this list. What
10 was the numerical score of Pueblo Depot Activity?

11 We also had a question -- there are
12 statements regarding the impact on employment, and it
13 speaks to the regional employment and provides data
14 for Pueblo County employment. In the section of the
15 report relating to the impact on the employment, are
16 regional employment and Pueblo County employment the
17 same thing; and if not, could you identify what was
18 the regional employment data base used to make the
19 calculations?

20 We also noted that there does not appear to
21 be a housing market impact assessment within the
22 report. I'm not sure that one is required; but we
23 would ask, if it is possible, to give consideration
24 to what will it do to the Pueblo housing market with
25 this many people, primary and secondary people,

1 losing their jobs. A decline in overall population
2 is also projected in the Pueblo housing market.

3 We would also like clarification with
4 respect to the model that was used, and it speaks
5 about a community's adaptability. Resiliency, I
6 believe, was the exact word. We looked in the
7 appendix, where we were referred to, to try to find
8 out what is the definition of a community's
9 resiliency. It is unclear. The only thing that we
10 could deduce is that if a community has survived high
11 unemployment and adversity in the past, that you
12 presume that it will be able to sustain that again.
13 I'm not sure we agree with that logic, but we need to
14 know what is your technical definition of resiliency
15 and how does it work within the model.

16 COL BORNHOFT: I understand.

17 MR. FINLEY: That's our comments.

18 COL. BORNHOFT: Okay. Is there anyone else
19 who has any questions or comments they wish to offer
20 or submit? Why don't we pass you the microphone and
21 ask you if you would state your name and your
22 affiliation.

23 MS. ANTON: Genevieve Anton. I'm with the
24 Gazette Telegraph newspaper in Colorado Springs. I
25 didn't see anything -- and maybe I overlooked it in

1 the draft statement -- about the cost of this, but is
2 that considered part of the Environmental Impact
3 Statement, what it will cost to actually move these
4 operations to another location and a balancing of how
5 you're going to make up for that cost?

6 MR. MICK: Was that the cost you were
7 talking about earlier; not the cost of the
8 preparation of the EIS but the --

9 MS. ANTON: That was about preparation of
10 the EIS.

11 COL. BORNHOFT. Let me clarify. There was
12 a question prior to the meeting beginning that I had
13 understood to be what was to be the cost of the
14 preparation of the EIS itself.

15 MS. ANTON: If you want to add that to
16 it --

17 COL. BORNHOFT: Are you asking that
18 question also?

19 MS. ANTON: Yes, two questions. What is
20 the cost of the EIS, and what would be the cost of
21 actually transferring these operations to another
22 base, and is there any consideration given of how --
23 of that as a factor in whether or not to do it?

24 I'll throw this one in, too. Also, does
25 the study look -- is it going to look at any

1 possibility of other operations being brought here to
2 offset or mitigate some of the lawsuits as
3 consideration for moving these operations out?
4 Because my understanding is the EIS isn't looking at
5 the impact of closing the depot, since that's not
6 what this decision is addressing; yet, in effect, you
7 are closing most of the operations of the depot by
8 doing this.

9 COL. BORNHOFT: Question understood. My
10 head nodding is not answering the question. It
11 acknowledges the fact that I'm understanding the
12 question. Do you have any others?

13 MS. ANTON: That's it.

14 COL. BORNHOFT. Thank you. Is there anyone
15 else who has any questions or comments they wish to
16 add or offer at this time?

17 Hearing none and seeing none, at this time,
18 I would thank you for attending. Again, I remind you
19 that if you wish to submit a written statement, you
20 can do so up until and including the 15th of July,
21 1991. The statement should be sent to the Omaha
22 District. The address is in your handout. Again, I
23 thank you for attending and the meeting --

24 MS. ANTON. I have one question. This
25 isn't for the record. How do we find out what the

1 responses are to some of the questions raised
2 tonight? Will that be addressed in the final EIS?

3 COL. BORNHOFT: It is, and I'm going to ask
4 Gary, who has more experience in writing those. That
5 question I will answer now.

6 MR. MICK: Basically, the format that we
7 try and follow for a final EIS is on one side of the
8 page we'll have a letter from such as yourself or an
9 individual; opposite that, our responses to the
10 concerns brought up in that letter so the people can
11 see exactly how we responded to those.

12 If there are any changes made to the
13 Environmental Impact Statement itself, also in our
14 response we would indicate where in the report the
15 reader would find that response or that change, such
16 as page number so and so, paragraph number so and
17 so.

18 You'll have an opportunity to view that
19 final EIS, also. It will be made available for
20 public comment, if you request a copy of it, for a
21 30-day period following the notification of its
22 availability in the Federal Register.

23 MS. ANTON: You don't have a date for when
24 that would be?

25 MR. MICK: We have a tentative date --

1 where is Kettie? End of August? Okay. Not an exact
2 date, but approximately the end of August.

3 MS. ANTON: These comments will be
4 available after the public comment the 17th you
5 said? And will the publication of the comments made
6 in this meeting, will it also include any written
7 comments that are later submitted?

8 MR. MICK: Yes, any comments that are
9 received between tonight's date and postmarked by
10 July 15 will be part of the official record of this
11 whole processing.

12 MS. ANTON: By putting our name on this
13 card, we get it sent to us; or do we need to contact
14 you?

15 MR. MICK: It's my understanding that we
16 are going to send out a notice when the final EIS is
17 available. If you want a copy, you will write to us
18 and ask for it; is that true?

19 MS. PARKS: Fill out the card tonight.

20 COL. BORNHOFT: Part of it is dictated by
21 what the volume is. If there's a huge volume,
22 there's one way of handling it. If you're talking a
23 small volume, then there's another way it can be
24 handled.

25 MS. ANTON: And the transcript for this,

1 same thing? You need to --

2 MR. MICK: The transcript you'll have to
3 request, and it will be available for so much per
4 page.

5 COL. BORNHOFT: But would be available here
6 at the depot for review at no charge.

7 Any other questions? I'm about two words
8 from saying the meeting is adjourned, and we can
9 continue talking after. If you want to have things
10 on the record, then I would want to get those. If
11 you're looking for kind of administrative
12 clarification things, we can probably do that more
13 informally and more effectively afterwards.

14 MS. BURKHART: On the card itself, there's
15 a place to check off that you want that transcript or
16 you don't. Do you need to officially request it
17 again if it's on that card you sent in, just for the
18 transcript?

19 MR. MICK: No, but you still have to pay
20 for it separately.

21 MS. BURKHART: Thank you.

22 COL. BORNHOFT: So the procedure there
23 would be when it's ready, we would find a way of
24 contacting you based upon the information that's
25 provided. Does it call for a phone number, too?

1 MS. PARKS: No, but that would be helpful
2 if they put their phone number.

3 COL. BORNHOFT: Again, if we're talking a
4 small volume, it's possible to make a phone call and
5 say "we're ready, here is what the cost is," and put
6 the thing in the mail.

7 Any other comments or questions? Okay, the
8 meeting officially stands adjourned.

9 (RECESSED AT 7:45 P.M.)

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REPORTER'S CERTIFICATE

I, KATHLEEN A. KOPTA, Certified Shorthand Reporter within Colorado, appointed to take the Public Meeting in the above matter, do certify that the meeting was taken by me at Pueblo Community College, Pueblo, Colorado, on 26 June 1991; then reduced to typewritten form, consisting of 25 pages herein; that the foregoing is a true transcript of the proceedings had.

I further certify that I am not related to any party herein and have no interest in the result of this matter.

In witness whereof I have hereunto set my hand this 10th day of July, 1991.


Kathleen A. Kopta, CSR
Registered Professional Reporter
and Notary Public
3009 W. Colorado Avenue Suite B
Colorado Springs, CO 80904

My commission expires March 24, 1992.

APPENDIX B

CULTURAL DATA

PROGRAMMATIC AGREEMENT
AMONG
DEPARTMENT OF THE ARMY
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, AND
THE NATIONAL CONFERENCE OF STATE HISTORIC PRESERVATION OFFICERS
CONCERNING
REALIGNMENT AND CLOSURE OF ARMY INSTALLATIONS
IN ACCORDANCE WITH
BASE CLOSURE AND REALIGNMENT ACT

WHEREAS, the Department of the Army (Army) is responsible for implementation of applicable portions of the Base Closure and Realignment Act of 1988 (P.L. 100-526), commonly known as the "BRAC" program; and

WHEREAS, the Army is proceeding with base realignment and closure actions, to include the realignment of functions and units, closure of installations, and disposal of surplus property in a manner consistent with the "Report of the Defense Secretary's Commission on Base Realignments and Closures," December 29, 1988 (Commission Report); and

WHEREAS, the Army has determined that its implementation of the BRAC program may have effects on properties included in and eligible for inclusion in the National Register of Historic Places (historic properties); and

WHEREAS, the Army has consulted with the Advisory Council on Historic Preservation (Council) and the National Conference of State Historic Preservation Officers (NCSHPO) pursuant to Section 800.13 of the regulations (36 CFR Part 800) implementing Sections 106 and 110(f) of the National Historic Preservation Act (NHPA) and Army Regulation 420-40, "Historic Preservation;"

NOW, THEREFORE, the Army, the Council, and the NCSHPO agree that the Army's implementation of the BRAC program shall be administered in accordance with the following stipulations, which will satisfy the Army's Section 106 and 110(f) responsibilities for all individual undertakings under the BRAC program.

Stipulations

The Army will ensure that the following measures are carried out.

I. Applicability

The terms of this Agreement are intended to apply to all Army installations which may be affected under the provisions of P.L. 100-526 (see Attachment 1), with the exception of the 52 Stand Alone Housing Sites that are variously located in

Connecticut, Illinois, Maryland, Massachusetts, Missouri, New Jersey, New York, Pennsylvania, Rhode Island, Virginia, Washington, and Wisconsin. Those sites will be the subjects of individual consultation between the Army and the appropriate State Historic Preservation Officer (SHPO) in accordance with Section 800.4 and 800.5 of 36 CFR Part 800.

II. Areas of Potential Effects

Although some BRAC activities may induce changes in population distribution, traffic, and land use that extend beyond the particular facilities to be closed and parcels on which new construction will occur, the effect of these changes on historic properties is uncertain and in most cases is expected to be minor. Accordingly, the area of potential effects (36 CFR 800.2[c]) of a BRAC action shall be understood to be the area of the facility to be closed and/or constructed, unless there is compelling evidence that effects are likely to occur in a broader area. In cases of dispute over the area of potential effects of a BRAC action, the opinion of the Council will be binding on all parties to this Agreement.

III. NEPA and Preliminary Coordination with the SHPO

A. It is mutually understood that many of the terms of this Agreement will be carried out after the Army has complied with the National Environmental Policy Act (NEPA) and filed its Record of Decision (ROD). Nevertheless:

1. whenever it is feasible for the Army to carry out the terms of this Agreement prior to filing the ROD, the Army will do so; and
2. whenever the Army files a ROD on a BRAC action for which the terms of this Agreement have not yet been fully implemented, the Army will stipulate in the ROD that the NHPA has not yet been complied with and that no action will be taken which would foreclose completion of the Army's responsibilities under the NHPA; and
3. the Army will ensure that no actions that could result in effects on historic properties are undertaken pursuant to a ROD until the terms of this Agreement have been carried out.

B. The Army will notify the appropriate SHPO at the earliest time possible of the nature and timing of the BRAC actions for individual installations and will provide the

following information:

1. a description of the type and location of the undertaking.

2. currently available milestones for BRAC actions affecting the installation.

3. information available about historic properties at the installation.

C. The Army will coordinate the NEPA process with its NHPA activities. In accordance with the memorandum to all BRAC participants dated July 12, 1989 (Attachment 2), NEPA documentation for each facility will:

1. identify known historic properties and past studies;

2. identify the potential for historic properties to be affected by the BRAC process; and

3. identify the steps necessary for the Army to meet its Section 106 responsibilities under NHPA.

D. The Army will invite comments from affected SHPOs on Environmental Assessments (EA) and Draft Environmental Impact Statements (DEIS).

E. The Army shall provide a copy of this Agreement, its attachments, AR 420-40, 36 CFR 800, and the materials listed in Stipulation IX of this Agreement to appropriate commanders.

IV. IDENTIFICATION AND EVALUATION

A. Identification

1. Based on the assembly of existing information through the NEPA process, the Army will consult with individual SHPOs and make a reasonable and good faith effort to identify historic properties located on installations under Army control that will be affected by BRAC.

2. When existing information is not adequate for identifying significant properties, the Army will undertake installation-specific field surveys in accordance with appropriate professional standards as defined in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716-42; hereafter "Standards and

Guidelines"), except as provided in Attachment 3.

3. The Army will develop priorities for undertaking identification and evaluation of historic properties on individual installations. These priorities will be determined by:

- a. the specific nature and timing of the undertaking proposed;
- b. the nature and extent of the individual Army installation and its land use history;
- c. the potential nature and extent of historic properties; and
- d. possible constraints on field investigations, such as ranges, impact and contaminated areas, safety zones and hazardous materials.

4. All identification and evaluation activities will be carried out in consultation with the appropriate SHPO. In addition, the Army and the SHPOs will assemble and exchange information as it becomes available on the location and evaluation of historic properties.

5. The Army will ensure the identification of records and objects related to the historic significance of properties to be disposed of. Each installation will be required to identify extant historic records and related historic objects.

6. Throughout the planning and implementation of the BRAC program, the Army will provide guidance to the field to ensure that historic properties are not inadvertently damaged, destroyed, or allowed to deteriorate.

B. Evaluation

The Army will determine the eligibility of properties for inclusion in the National Register in accordance with 36 CFR 800.4(c), and with reference to inventories and planning by the State, the Army's history and traditions, previous Army historic site surveys, and any thematic studies that may have been completed or are underway.

V. Determinations of Effect

A. The Army, in consultation with the appropriate SHPO, shall determine the effect of BRAC actions on historic properties in accordance with 36 CFR 800.5, applying the Criteria of Effect

and Adverse Effect at 36 CFR 800.9.

B. Where the Army determines pursuant to 36 CFR 800.5 that an adverse effect may occur, then:

1. if the Army determines, in consultation with the SHPO and taking into account the comments, if any, of the interested persons identified at 36 CFR 800.5(e)(1), that it is appropriate to apply the standard mitigation measures set forth in Attachment 4, the Army may provide the SHPO and the Council with sufficient documentation to support this determination, advise them that it intends to carry out the specified measures, and request their concurrence within 15 days. If the Council and the SHPO concur within 15 days of their receipt of such documentation, the Army shall carry out the standard mitigation measures it has determined to be appropriate. Failure by the Council or SHPO to respond within the specified time period shall be taken to evidence that party's concurrence. Should the Council or SHPO disagree with the Army's determination, the Army will undertake consultation in accordance with 36 CFR 800.5(e).

2. if the Army and the SHPO, taking into account the comments, if any, of the interested persons identified at 36 CFR 800.5(e)(1), agree on a program to avoid, minimize, or mitigate the adverse effect, the Army may provide the Council with sufficient documentation to support this determination and request its concurrence within 30 days. If the Council concurs within 30 days of its receipt of such documentation, the Army shall carry out the program. Failure by the Council to respond within the specified time period shall be taken to evidence the Council's concurrence. Should the Council object to the program, the Army will undertake consultation in accordance with 36 CFR 800.5(e).

3. if the Army determines that neither paragraph 1 nor paragraph 2 above is applicable, the Army will undertake consultation in accordance with 36 CFR 800.5(e).

VI. Treatment and Management.

A. The Army will ensure that the effects of BRAC actions on historic properties are treated in accordance with the determinations and agreements reached pursuant to Stipulation V.

B. For those installations or portions of installations which will remain under Army control, the Army will develop treatment and management plans to ensure that properties affected by BRAC are incorporated into installation Historic Preservation Plans (HPP) in accordance with AR 420-40, and shall create such

HPPs should they not presently exist. All such HPPs shall be developed or amended to include properties affected by BRAC within a reasonable period of time following the date of this Agreement, not to exceed the September 30, 1995 date for completion of BRAC actions as specified in P.L. 100-526.

C. For those installations of which the Army will dispose, the Army will work with the local re-use committees, appropriate SHPOs and other interested parties to develop treatments and/or management plans to ensure compatible reuse.

D. Notwithstanding any other provision of this Agreement, the Army may undertake documentation of historic structures in a manner consistent with the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation (48 FR 44730-34) prior to making a determination or reaching an agreement pursuant to Stipulation V, if the Army judges that such documentation is likely to be part of a mitigation program that will subsequently be agreed to.

E. Notwithstanding any other provision of this Agreement, the Army may enter into agreements with SHPOs and the Council, seeking the concurrence of other interested persons, if any, establishing processes for the identification, evaluation, treatment and management of historic properties that may be subject to effect by a BRAC action, in lieu of identifying such properties and establishing specific treatment or management plans for them prior to making a decision regarding such an action, where:

1. the precise nature, schedule, location or design of the action is uncertain, and

2. the Army, SHPO, and Council agree that the effects of the action are likely to be relatively minor, or affect properties whose treatment or management will require the application of routine procedures.

VII. Interim Protection, Records Retention, and Long Term Curation

A. The Army will notify the appropriate commanders of the need for interim protection of identified and potential historic properties to ensure that deferred maintenance or other management decisions do not adversely effect the integrity of these properties. Important architectural elements will be identified to ensure future appropriate disposal.

B. The Army will consult with the SHPO on terms of curation

and disposition of historical documents, drawings, photographs, reports, and archeological materials generated by BRAC studies.

VIII. Public Involvement

A. The Army will ensure that the activities of the local re-use committees will be coordinated, as appropriate, with activities carried out under this Agreement.

B. The Army and the appropriate SHPO will consider the need for additional consulting parties consistent with the Council's publication, "Public Participation in Section 106 Review: A Guide for Agency Officials" (Advisory Council on Historic Preservation, 1989).

C. To the extent possible, public participation shall be coordinated with public participation under NEPA.

IX. Standards and Guidelines,

Standards and guidelines for implementing this Agreement include, but are not limited to:

Army Regulation (AR) 420-40: Historic Preservation
(Department of the Army, 15 May 1984);

36 CFR Part 800: Protection of Historic Properties;

The Section 110 Guidelines: Guidelines for Federal
Agency Responsibilities under Sec. 110 of the National
Historic Preservation Act (53 FR 4727-4746);

The Secretary of the Interior's Standards and
Guidelines for Archeology and Historic Preservation (48
FR 44716-42);

The Secretary of the Interior's Standards for
Rehabilitation and Guidelines for Rehabilitating
Historic Buildings (National Park Service, 1983);

Identification of Historic Properties: a Decisionmaking
Guide for Managers (Advisory Council on Historic
Preservation, 1988);

Public Participation in Section 106 Review: A Guide for
Agency Officials (Advisory Council on Historic
Preservation, 1989); and

Preparing Agreement Documents (Advisory Council on
Historic Preservation, 1989).

X. Dispute Resolution

A. Should a SHPO or an interested person identified at 36 CFR 800.5(e)(1) object to the Army's implementation of any part of this Agreement, the Army shall consult with the objecting party to resolve the objection. If the Army determines that the objection cannot be resolved, the Army shall forward all documentation relevant to the dispute to the Council. Within 30 days after receipt of all pertinent documentation, the Council will either:

1. provide the Army with recommendations, which the Army will take into account in reaching a final decision regarding the dispute; or

2. notify the Army that it will comment pursuant to 36 CFR 800.6(b), and proceed to comment. Any Council comment provided in response to such a request will be taken into account by the Army in accordance with 36 CFR 800.6(c)(2) with reference to the subject of the dispute.

B. Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute; the Army's responsibility to carry out all actions under this Agreement that are not the subject of the dispute will remain unchanged.

C. Should a member of the public object to any measure carried out under the terms of this Agreement, or the manner in which such a measure is implemented, the Army shall take the objection into account and consult as needed with the objecting party, the SHPO, and the Council to resolve the objection.

XI. Amendments

Any party to this Agreement who determines that some portion of the Agreement cannot be met must immediately request the other signatories to consider an amendment or addendum to this Agreement which would ensure full compliance. Such an amendment or addendum shall be executed in the same manner as the original Agreement. Should any party to this Agreement be unable to maintain a level of effort sufficient to carry out the terms of

this Agreement, that party shall notify the others and seek an appropriate amendment.

Execution and implementation of this Programmatic Agreement evidences that the Army has satisfied its responsibilities under Sections 106 and 110(f) of the National Historic Preservation Act for all individual undertakings of the program.

DEPARTMENT OF THE ARMY

BY: Paul W. Johnson (date) 5 FEB. 1990
Paul W. Johnson, Deputy Assistant Secretary of the Army
(Installations and Housing)

NATIONAL CONFERENCE OF STATE HISTORIC PRESERVATION OFFICERS

BY: F. Lawrence Oaks (date) 2-5-90
F. Lawrence Oaks, President

ADVISORY COUNCIL ON HISTORIC PRESERVATION

BY: John F. W. Rogers (date) Feb. 5, 1990
John F. W. Rogers, Chairman

ATTACHMENT 1

Alabama

Alabama Army Ammunition Plant - closure
Coosa River Annex - closure
Anniston Depot - realignment
Redstone Arsenal - realignment

Arizona

Navajo Activity - closure
Fort Huachuca - realignment
Yuma Proving Ground - realignment

California

Presidio of San Francisco - closure
Hamilton Army Air Field - closure
Sierra Depot - potential realignment
Fort Ord - realignment
Oakland Army Base - realignment
Fort Irwin - realignment
Camp Parks - realignment
Sacramento Army Depot - realignment

Colorado

Bennett Army National Guard Facility - closure
Pueblo Depot - realignment
Fort Carson - realignment
Fitzsimmons Army Medical Center - realignment

District of Columbia

Fort McNair - realignment
Walter Reed Army Medical Center - realignment

Florida

Cape St. George Reservation - closure

Georgia

Fort Gordon - realignment
Fort Benning - realignment

Hawaii

Kapalama Military Reservation - closure
Schofield Barracks - realignment

Illinois

Fort Sheridan - closure

Indiana

Jefferson Proving Ground - closure
Indiana Army Ammunition Plant - partial closure
Fort Benjamin Harrison - realignment

Iowa

Fort De Moines - partial closure

Kansas

Fort Leavenworth - realignment

Kentucky

Lexington Bluegrass Army Depot - closure
Bluegrass Activity - realignment
Fort Knox - realignment
Fort Campbell - realignment

Louisiana

New Orleans Military Ocean Terminal - closure

Massachusetts

Army Material Technology Laboratory - closure
Fort Devens - realignment
Natick Research, Development & Engineering Center -
realignment

Maryland

Nike site at Aberdeen Proving Ground - closure
Gaithersburg Army Reserve Center - closure
Fort Meade - partial closure and realignment
Fort Holabird - partial closure and realignment
Fort Detrick - realignment
Aberdeen Proving Ground - realignment
Harry Diamond Laboratory - realignment

Michigan

Pontiac Storage Facility - closure
Detroit Arsenal - realignment

Missouri

Nike site at Kansas City - closure
Fort Leonard Wood - realignment

North Carolina

Fort Bragg - realignment

New Jersey

Fort Dix - realignment
Fort Monmouth - realignment
Picatinny Arsenal - realignment
Nike Philadelphia 41/43 (stand alone housing) - closure

New Mexico

Fort Wingate - closure
White Sands Missile Range - realignment

Nevada

Hawthorne Army Ammunition Plant - realignment

New York

Fort Drum - realignment

Oklahoma

Fort Sill - realignment

Oregon

Umatilla Depot - realignment

Pennsylvania

Tacony Warehouse - closure
Tobyhanna Depot - realignment
Letterkenny Depot - realignment
Fort Indian Town Gap - realignment

South Carolina

Fort Jackson - realignment

Texas

Fort Bliss - realignment
Red River Depot - realignment

Utah

Fort Douglas - closure
Tooele Depot - realignment

Virginia

Cameron Station - closure
Fort Belvoir - realignment
Fort Lee - realignment
Fort Myer - realignment
Fort A. P. Hill - realignment

Washington

Fort Lewis - realignment

Wisconsin

Fort McCoy - realignment

ATTACHMENT 2



DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF STAFF
WASHINGTON D C 20310 0200



DACS-DMB (5-10c)

12 JUL 1989

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Plan to Accomplish Historic and Cultural Resources Requirements
IAW Base Realignment and Closure Implementation Plan for the Army

1. Reference:

a. DACS-DM, Letter, HQDA, 13 Feb 89, subject: Headquarters, Department of the Army Base Realignment and Closure Implementation Plan.

b. CERE-ZA, Letter, HQUSACE, 18 May 89, subject: Potential Effect of Base Realignments and Closures on Cultural Resources.

2. Purpose. To ensure that the requirements of the National Historic Preservation Act (NHPA) of 1966, as amended, its implementing Federal regulations and AR 420-40: Historic Preservation are accomplished in accordance with the guidance and schedule set forth in Ref. 1.a.

3. General Guidance.

a. This letter provides guidance for accomplishment of responsibilities discussed in Ref. 1.b. by COE, MACOMs, installations, and USACE districts and USACE Mobile District.

b. The NHPA requirements shall be met in coordination with the National Environmental Policy Act (NEPA) actions to the greatest extent possible. In addition, all base realignment and closure undertakings that may have an effect on significant historic places (buildings, structures, sites, districts and objects that meet the criteria of the National Register of Historic Places) shall be reviewed with the appropriate State Historic Preservation Officer (SHPO) and with the Advisory Council on Historic Preservation (Advisory Council), in accordance with the Council's regulations, 36 CFR 800. It is expected that most consultations will result in a Memorandum of Agreement (MOA) between the Army, the SHPO, the Advisory Council and any other appropriate consulting parties.

4. Chief of Engineers (COE) will:

a. In accordance with Ref. 1.a. provide technical advice and assistance relating to compliance with historic and cultural resources laws, rules, and regulations.

DACS-DMB (5-10c)

SUBJECT: Plan to Accomplish Historic and Cultural Resources Requirements
IAW Base Realignment and Closure Implementation Plan for the Army

b. Convene a meeting of Cultural Resources (CR) Subcommittee of ERACO Environmental Committee as required, but not less than every 6 months. The chair of the subcommittee is the HQDA Historic Preservation Officer and members are the historic preservation officers for AMC, FORSCOM, and TRADOC, and the cultural resource specialist for Mobile District.

c. Develop standards for information about historic and cultural resources and for assessments of undertakings having an effect on significant historic resources.

d. Assist MACOMs in developing MOAs and compliance documents for individual installations.

e. Consult with the National Conference of State Historic Preservation Officers (NCSHPO) and the Advisory Council to develop an Army-wide Programmatic Agreement (PA) (IAW 36 CFR 800).

f. Obtain the signature of the Army's Federal representative on Memorandums of Agreement(MOA) entered into with the Advisory Council and the SHPOs for installation base realignment and closure undertakings.

g. Review historic and cultural resources work requirements and cost estimates, as requested by MACOMs.

h. Monitor compliance activities in order to correlate with ERACO schedule and report to Deputy Assistant Secretary of the Army (Installations and Housing).

i. Point of contact is Constance Ramirez (CEHSC-FN) CML 202-272-0867, AV 285-0867.

6. MACOMs will:

a. Ensure that all installations meet NHPA requirements.

b. Include compliance with NHPA in MACOM Base Realignment and Closure Implementation Plan and engineer action plan.

c. Identify installation historic and cultural resources work requirements and cost estimates.

d. Identify compliance tasks and schedule for each installation.

DACS-DMB (5-10c)

SUBJECT: Plan to Accomplish Historic and Cultural Resources Requirements
IAW Base Realignment and Closure Implementation Plan for the Army

e. Assist installations, as appropriate, in development of MOAs and other compliance and mitigation documents.

f. Forward all MOAs to COE for ratification by Army's Federal Representative (DASA(I&H)).

g. Ensure that guidance and information on historic preservation compliance is disseminated in a timely manner to MACOM components.

h. Review DD Form 1391 to ensure project compliance with NHPA and/or MOAs.

i. Coordinate with Center for Military History on treatment of historic records associated with historic places.

j. Provide installation points of contact for historic resources to OCOE (CEHSC-FN).

k. MACOM historic preservation contacts are:

FORSCOM: Dr. James Cobb/FACEN-CDP/(404)362-7186

TRADOC: Dr. Paul Green/ATEN-FN/(804) 727-2362

AMC: Mr. Paul McGuff/CESWF-PL-RC/USACE Fort Worth
District/(817)334-2095

MDW: Ms. Peggy Weigle/ANRM-MRB/(202)475-1199

7. Installations will:

a. Provide all existing information about historic and cultural resources to USACE districts preparing Environmental Assessment/Environmental Impact Statement.

b. Ensure adequacy of historic and cultural resource information in NEPA documentation.

c. Establish a POC for historic resources for all base realignment and closure actions and forward name, address and telephone number to MACOM POC.

d. Provide materials about the installation's mission and its historic and cultural resources for compliance consultation with SHPO, Advisory Council and MACOM.

DACS-DMB (5-10c)

SUBJECT: Plan to Accomplish Historic and Cultural Resources Requirements
IAW Base Realignment and Closure Implementation Plan for the Army

8. USACE District Offices will:

a. Ensure that historic and cultural resources are included in each EA and EIS.

b. Include the following information in each EA/EIS regarding historic and cultural resources:

(1) Summary of existing information about the location, identification, evaluation (including overviews, inventories, mitigation documents, National Register nominations, consensus determinations, and National Historic Landmarks) and management (including any PAS, MOAs, historic preservation plans, archeological resources management plans, maintenance plans, historic family housing studies, etc.).

(2) Evaluation of the adequacy of the existing information to fully or partially meet compliance requirements for this realignment or closure undertaking.

(3) List of references consulted to determine known and likely historic and cultural resources.

(4) Identify (on a map which indicates cantonments, impact areas, ranges, etc.) all resources known to meet the criteria of the National Register.

(5) Map identification of all resources likely (high probability) of meeting National Register criteria.

(6) Map identification of all resources that are more than 40 years old and that are unlikely (low probability) to meet National Register criteria.

(7) List of public concerns (from NEPA scoping and other activities) about historic and cultural resources and all contacts with SHPO regarding closure or realignment undertaking.

(8) Identify the effects of the undertaking on all properties identified in (3), (4), and (5) above and on those resources for which data to evaluate them are not available.

DACS-DMB (5-10c)

SUBJECT: Plan to Accomplish Historic and Cultural Resources Requirements
IAW Base Realignment and Closure Implementation Plan for the Army

c. Identify future work that will be required in order to meet NEPA and NHPA Section 106, 110, and 111 requirements. Recommendations for work should be restricted solely to those effects brought about by base closure or realignment. Information about work efforts to be recommended at the affected installations will include:

(1) Approximate size (in acres) of areas to be recommended for archeological survey.

(2) Approximate number and locations of buildings, structures, districts, objects or sites to be recommended for historical inventory.

(3) Approximate number of known archeological sites needing additional testing or data analysis to determine National Register eligibility.

(4) Separate cost estimates to complete each of the above studies broken out at a minimum by contract and administration costs or by in-house costs if the tasks can be completed by Corps of Engineers cultural resource personnel.

(5) Separate cost estimates for those installations to be realigned if activity placement alternatives have been identified that will differentially affect cultural resources. The estimates should reflect the different costs between locating activities in areas thought to have a high potential for possessing significant cultural resources versus areas thought to have a low potential for possessing significant resources.

d. Provide MACOMs with cost estimates to complete work identified in Subparagraph c above NLIT 4 Aug 89. Work items shall indicate if tasks are to identify and evaluate historic resources or to mitigate the effects of the base realignment and/or closure undertaking.

e. Provide POC for historic resources actions to MACOMs and COE.

9. USACE Mobile District will:

a. Provide project management oversight and coordination between the USACE direct support districts, MACOMs, and DA during the NHPA process.

b. Continue overall project management and coordination duties during the ongoing NHPA compliance process, following completion of initial EA/EIS documentation, to include oversight of historic preservation action plan.

DACS-DMB (5-10c)

SUBJECT: Plan to Accomplish Historic and Cultural Resources Requirements
IAW Base Realignment and Closure Implementation Plan for the Army

- c. Consult with the MACOMs on the preparation of the historic preservation action plan to be developed in conjunction with the MACOM funding requests.
 - d. Assist the MACOMs and DA to see that work items identified in the action plan are carried out through a number of contracting alternatives, including utilization of the existing USACE direct support districts.
 - e. Assist OCE ERACO CR Subcommittee in developing MACOM funding requirements and consolidating funding requirements for submission to OCE ERACO, and oversee distribution of funds for accomplishment of items in historic preservation action plan.
 - f. Represent the USACE direct support districts on the OCE ERACO CR Subcommittee.
 - g. Ensure that historic preservation compliance documents (and MOAs if required) are completed for Stand Alone Housing.
10. Schedule: In order to ensure that NHPA requirements do not delay realignments and closure activities, the following schedule has been established:
- a. 25 May 89: CR Subcommittee met to develop plan.
 - b. 5 Jun 89: Historic and Cultural Resources Requirements Plan distributed.
 - c. 1 Aug 89: Complete PA with Advisory Council.
 - d. 4 Aug 89: Cost estimates for future work due from Districts for MACOMs.
 - e. 17 Oct 89: CR Subcommittee meeting to review work items, adjust implementation and action plans and develop baseline information for MOAs.
 - f. Apr 90: Complete early MOAs; CR Subcommittee meeting.
 - g. Oct 90: Complete all possible MOAs; CR Subcommittee meeting.
 - h. Apr 91: Complete late MOAs; CR Subcommittee meeting.

DACS-DMB (5-10c)

SUBJECT: Plan to Accomplish Historic and Cultural Resource
Require-ments IAW Base Realignment and Closure Implementation for
the Army

11. Point of contact is David Ventzer, DAEN-ZCI-A, CML (202)
694-4313/AV 224-4313 for administrative questions and Constance
Ramierz, CEHSC-FN, CML (202) 272-0867/AV 285-0867 for technical
questions.

BY DIRECTION OF THE CHIEF OF STAFF:



CHARLES E. WILLIAMS
Major General, GS
Director of Management

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U. S. ARMY RECRUITING COMMAND

ATTACHMENT 3

EXCEPTIONS TO IDENTIFICATION PROCEDURES

Where existing information is not adequate for identifying historic properties, the Army nonetheless need not undertake installation-specific field surveys pursuant to Stipulation IV.A.2 if:

a. the lands involved will be transferred to another Federal agency that will use them for purposes no more likely to adversely affect historic properties than those for which the lands are presently used by the Army, provided the recipient Federal agency agrees to develop and implement a program, in consultation with the SHPO and other interested persons, for carrying out the requirements of Section 110(a)(2) of the National Historic Preservation Act on the lands it receives; or

b. the lands involved will be transferred to a State or local agency that enters into an agreement with the Army, the SHPO, and the Council stipulating that it will use them for purposes likely to have no adverse effect on historic properties which may be present, and that it will develop and implement a program, in consultation with the SHPO, the Council, and other interested persons, for identifying and protecting historic properties in a manner consistent with the "Standards and Guidelines" and other applicable Department of the Interior and Council guidelines; or

c. the BRAC action that will affect the lands involved, and the nature of the historic properties that may exist on such lands, are such that the Army, the SHPO, the Council, and other interested persons agree that identification need not be carried out, or may be carried out at a later date, and enter into an agreement stipulating how and by whom any identification will be carried out.

ATTACHMENT 4

STANDARD MITIGATION MEASURES

1. Transfer of a historic building or structure subject to a preservation covenant, enforceable under applicable State law, equivalent to the example shown in Figure 7 of the Council's 1989 publication: "Preparing Agreement Documents" (pp. 30-31), combined with a program of recordation approved by the SHPO as consistent with the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation (48 FR 44730-34).

2. Recovery of data from an archeological site or sites in accordance with a research design and data recovery plan prepared in consultation with the SHPO and interested persons (including any interested Indian tribe or other Native American group) and addressing each of the following points:

- the property, properties, or portions of properties where data recovery is to be carried out;

- any property, properties, or portions of properties that will be altered or transferred without data recovery;

- the research questions to be addressed through the data recovery, and the importance and relevance of each;

- the methods to be used, and their relevance to the research questions;

- the methods to be used in analysis, data management, and dissemination of data, including a schedule;

- the disposition of recovered materials and records;

- the methods for involving the interested public in the data recovery;

- the methods for disseminating results of the work to the interested public;

- the methods by which local governments, Indian tribes, and other interested persons will be kept informed of the work and afforded the opportunity to comment; and

- the methods and schedule by which progress and final reports will be provided to the SHPO, the Council, and interested persons.



TEXAS HISTORICAL COMMISSION

P.O. BOX 12276

AUSTIN, TEXAS 78711

(512)463-6100

September 7, 1990

C.R. Wilcox, P.E.
Facilities Engineer
Department of the Army
Red River Army Depot
Texarkana, TX 75507-5000

Re: Red River Army Depot (RRAD) in Bowie
County, ammunition storage & test facilities
construction (ARMY, A5, A6, D1d)

Dear Mr. Wilcox:

We are in receipt of an archeological report concerning the above referenced undertaking. After reviewing the report we conclude that, as described, the proposal should not affect sites on the National Register of Historic Places, nor any site determined eligible for the National Register.

The project may continue without further consultation with this office. However, it is possible that buried archeological deposits may be present in the project area. If artifacts are encountered during construction, work should cease in the immediate area; work can continue in the project area where no archeological deposits are present. The Advisory Council on Historic Preservation should be contacted in accordance with 36CFR800.11.b.2. Please also notify the State Historic Preservation Officer (512/463-6096).

Sincerely,

James E. Bruseth, Ph.D.
Deputy State Historic Preservation Officer

BM/JEB/lft



State of Utah

Division of State History

(Utah State Historical Society)

Department of Community and Economic Development

Norman H. Bangerter

Governor

Max J. Evans

Director

300 Rio Grande

Salt Lake City, Utah 84101-1182

801-533-5755

January 2, 1990

Mr. Lewis A. Whitney
Chief, Engineering Division
Attn: Civil Projects, Section A
Department of the Army
Sacramento District Corps of Engineers
650 Capitol Mall
Sacramento, CA 95814-4794

RE: "Intensive Cultural Resources Survey, New Warehouse Facility, Tooele Army Depot, Tooele County, Utah"

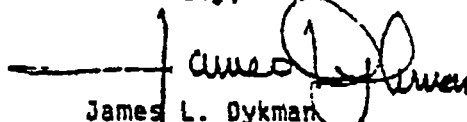
In Reply Please Refer to Case No. N556

Dear Mr. Whitney:

The Utah State Historic Preservation Office received the above referenced report on December 18, 1989. The report states that no cultural resources were located during the survey of this project area. We, therefore, concur with your recommendation that no historic properties will be impacted by the project.

This information is provided on request to assist the Department of the Army with its Section 106 responsibilities as specified in 36 CFR 800. If you have questions or need additional assistance, please contact me at (801) 533-7039.

Sincerely,


James L. Dykman
Regulation Assistance Coordinator

JLD:N556/8150V DOD/NP



Norman H. Bangert
Governor
Max J. Evans
Director

State of Utah

Division of State History
(Utah State Historical Society)
Department of Community and Economic Development

200 Rio Grande
Salt Lake City, Utah 84101-1152
801-533-5755

November 27, 1990

Roger G. Olson
Attn: Directorate of Engineering and Logistics
Department of the Army
Tooele Army Depot
Tooele, Utah 84074-5000

RE: Modifications to Real Property at Tooele Army Depot, Tooele County, Utah

In Reply Please Refer to Case No. 90-1482

Dear Mr. Olson:

The Utah State Historic Preservation Office received the above referenced report on November 9, 1990. After review of the report, our office has several questions about the consulting report that the Corps of Engineers produced for Tooele Army Depot. Our questions concern the historical context of the eleven buildings. Please have Dennis Weder contact our office.

This information is provided on request to assist the Department of the Army with its Section 106 responsibilities as specified in 36 CFR 800. If you have questions or need additional assistance, please contact me at (801) 533-7039.

Sincerely,


James Dykman
Regulation Assistance Coordinator

JLD:90-1482 DOD



DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P O. BOX 2288
MOBILE, ALABAMA 36628-0001

January 5, 1990

Alabama
Historical Commission

JAN 8 1990

RECEIVED

REPLY TO
ATTENTION OF:

Environmental Resources
Planning Section

Mr. F. Lawrence Oaks
Alabama State Historic
Preservation Officer
Alabama Historical Commission
725 Monroe Street
Montgomery, Alabama 36104

Dear Mr. Oaks:

Enclosed is a report concerning a cultural resources survey of a proposed building construction site at Anniston Army Depot, Calhoun County, Alabama. This survey was conducted as part of an action associated with the Base Closure and Realignment Act of 1988 (P. L. 100-526). The survey was conducted by a Mobile District archeologist on December 14, 1989. No archaeological sites or remains were discovered within the proposed project area.

If you concur with the results of this survey please sign below and return this letter within thirty (30) days. Should you require additional information please contact Dr. Neil Robison of my staff at 205/694-4112.

Sincerely,

Hugh A. McClellan
Chief, Environment and Resources
Branch

Enclosure

CONCURRENCE:

F. Lawrence Oaks (date)
Alabama State Historic
Preservation Officer 1-19-90

APPENDIX C

U.S. FISH
AND WILDLIFE
SERVICE
CORRESPONDENCE



IN REPLY REFER TO

United States Department of the Interior

FISH AND WILDLIFE SERVICE
COLORADO FIELD OFFICE
730 SIMMS STREET
ROOM 292
GOLDEN, COLORADO 80401

JUN 30 1989

James B. Hildreth
Assistant Chief, Planning Division
U.S. Army Corps District, Mobile
P.O. Box 2288
Mobile, Alabama 36628-0001

SUBJECT: Notice of Intent to Prepare an Environmental Impact Statement for
Base Closure, Pueblo Army Depot, Pueblo County, Colorado (ER 89/421)

Dear Mr. Hildreth:

The Fish and Wildlife Service (Service) has prepared the following comments in response to the subject notice.

The Environmental Impact Statement (Statement) for Closure of the Pueblo Army Depot (Depot) should address the following fish and wildlife resource concerns.

Threatened and Endangered Species

The following federally listed threatened and endangered species may occur within the Depot

FEDERALLY LISTED SPECIES, COLORADO November 1988

Species

Mammals: Black-footed ferret (Mustela nigripes)

Birds: Bald eagle (Haliaeetus leucocephalus)

Historically, the black-footed ferret occurred throughout Colorado. Literature and recent field studies document a close association between prairie dogs and black-footed ferrets. The standard that is used by the Service for determining possible project effects to black-footed ferrets is the disturbance of currently occupied prairie dog habitat. Should any of the activities associated with this project result in an impact to prairie dogs, black-footed ferret surveys may be necessary. As black-footed ferret surveys are considered valid for one year, prairie dog towns surveyed more than one year prior to impact may have to be resurveyed.

The Depot may be suitable for reintroduction of black-footed ferrets after closure. The statement should recognize this possibility and address this matter in the evaluation of future land use.

The Fish and Wildlife Service would like to bring to your attention species which are candidates for official listing as threatened or endangered species (Federal Register, Vol. 40, No. 181, September 18, 1985, Vol. 50, No. 188, September 27, 1985). While these species presently have no legal protection under the Endangered Species Act (Act), it is within the spirit of the Act to consider project impacts to potentially sensitive candidate species. Additionally, we wish to make you aware of the presence of Federal candidates should any be proposed or listed prior to the time that all Federal actions related to the project are completed.

CANDIDATE SPECIES AS OF 1/6/89

<u>CATEGORY</u>	<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>
<u>Fishes</u>		
2	Arkansas darter	<u>Etheostoma caeruleum</u>
<u>Reptiles</u>		
2	Texas horned lizard	<u>Phrynosoma cornutum</u>
<u>Birds</u>		
2	White-faced ibis	<u>Plegadis chihi</u>
2	Ferruginous hawk	<u>Buteo regalis</u>
2	Columbian sharp-tailed grouse	<u>Tympanuchus phasianellus columbianus</u>
2	Western snowy plover	<u>Charadrius alexandrinus nivosus</u>
2	Mountain plover	<u>Charadrius montanus</u>
2	Long-billed curlew	<u>Numenius americanus</u>
<u>Mammals</u>		
2	Spotted bat	<u>Euderma maculatum</u>
2	Preble's meadow jumping mouse	<u>Zapus hudsonius preblei</u>
2	Swift fox	<u>Vulpes velox</u>
2	Colorado hog-nosed skunk	<u>Conepatus mesoleucus faggi</u>

The potential effects of base closure and future land use upon these species should also be addressed by the Statement.

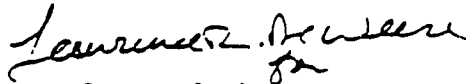
We regard wetlands as an important resource due to their high value for fish and wildlife. Therefore, we recommend that the project area be inventoried for wetlands. The Statement should define wetlands on the Depot according to "Classification of Wetlands and Deepwater Habitats of the United States"

(Cowardin, et al., 1977). Any adverse impacts to wetlands within the area of project influence should be avoided. Mitigation for unavoidable wetland impacts should be included in the Statement.

Base closure would present the opportunity to preserve and improve wildlife habitat in Colorado. The Service recommends that the Statement's evaluation of future land use of the Pueblo Depot site include a detailed discussion of wildlife habitat as the principal function.

Please contact Bill Noonan of this office at FTS 776-2675 (Comm 303-236-2675) if there are questions or for additional information.

Sincerely,

A handwritten signature in dark ink, appearing to read "LeRoy W. Carlson". The signature is fluid and cursive, with a small "for" written below the main name.

LeRoy W. Carlson
Colorado State Supervisor

cc: CDOW, Colorado Springs (Attn: Bruce Goforth)
FWE, SLC
FWE-RO, Denver



United States Department of the Interior
FISH AND WILDLIFE SERVICE



IN REPLY REFER TO

FWE
MAIL STOP 60120

MAILING ADDRESS
Post Office Box 25486
Denver Federal Center
Denver Colorado 80225

STREET LOCATION
134 Union Blvd.
Lakewood Colorado 80228

JUL 05 1990

James B. Hildreth, Assistant Chief
Planning Division, Mobile District
U.S. Army Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Mr. Hildreth:

This letter is in response to the notice in the Federal Register, Volume 54, No. 87, May 8, 1989, regarding a Notice of Intent to prepare an Environmental Impact Statement (EIS) for the closure of the Pueblo Army Depot (Depot), Colorado.

The EIS for the Depot should address the following fish and wildlife resource issues which are of concern to the Fish and Wildlife Service (Service).

Threatened and Endangered Species

The Federal agency, in this case the Army, is responsible for compliance with Section 7 of the Endangered Species Act of 1973 (Act), as amended. Any action that may affect an endangered or threatened species may require consultation with the Service. The federally listed threatened or endangered species that may occur within the Depot are the black-footed ferret (Mustela nigripes) and the bald eagle (Haliaeetus leucocephalus).

Historically, the black-footed ferret occurred throughout Colorado. Literature and recent field studies document a close association between prairie dogs and black-footed ferrets. The standard that is used by the Service for determining possible project effects to black-footed ferrets is the disturbance of currently occupied prairie dog habitat. Should any of the activities associated with this project result in an impact to prairie dogs, black-footed ferret surveys may be necessary. As black-footed ferret surveys are considered valid for 1 year, prairie dog towns surveyed more than 1 year prior to impact may have to be resurveyed. The Depot may be suitable for reintroduction of black-footed ferrets after closure. The statement should recognize this possibility and address this matter in the evaluation of future land use.

The Service also would like to bring to your attention species which are candidates for official listing as threatened or endangered species (Federal Register, Vol. 40, No. 181, September 18, 1985, and Vol. 50, No. 188, September 27, 1985). While these species presently have no legal protection under the Act, it is within the spirit of the Act to consider project impacts to potentially sensitive candidate species. Additionally, we wish to make you aware of the presence of Federal candidates should any be proposed or listed prior to the time that all Federal actions related to the project are completed.

The following are Candidate Species as of January 6, 1989. They are all designated as Category 2 which means a concern has been expressed but there is not adequate data to determine the definite status as threatened or endangered.

<u>Common Name</u>	<u>Scientific Name</u>
Fish	
Arkansas darter	<u>Etheostoma caeruleum</u>
Reptile	
Texas horned lizard	<u>Phrynosoma cornutum</u>
Birds	
White-faced ibis	<u>Plegadis chihi</u>
Ferruginous hawk	<u>Buteo regalis</u>
Columbian sharp-tailed grouse	<u>Tympanuchus phasianellus columbianus</u>
Western snowy plover	<u>Charadrius alexandrinus nivosus</u>
Mountain plover	<u>Charadrius montanus</u>
Long-billed curlew	<u>Numenius americanus</u>
Mammals	
Spotted bat	<u>Euderma maculatum</u>
Preble's meadow jumping mouse	<u>Onychomys leucogaster</u>

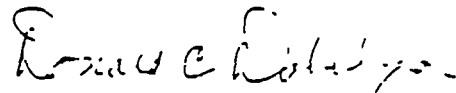
The potential effects of base closure and future land use upon these species also should be addressed by the EIS.

We regard wetlands as an important resource due to their high value for fish and wildlife. Therefore, we recommend that the project area be inventoried for wetlands. The EIS should define wetlands on the Depot according to "Classification of Wetlands and Deepwater Habitats of the United States" (Cowardin, et al., 1977). Any adverse impacts to wetlands within the area of project influence should be avoided. Mitigation for unavoidable wetland impacts should be included in the EIS.

Base closure would present the opportunity to preserve and improve wildlife habitat in Colorado. The Service recommends that the EIS's evaluation of future land use of the Pueblo Depot site include a detailed discussion of wildlife habitat as the principal function.

If you need further information or have questions contact our Fish and Wildlife Enhancement Colorado State Office, 730 Simms Street, Suite 290, Golden, Colorado 80401, telephone FTS 776-2675, Commercial (303) 236-2675.

Sincerely,



Robert D. Jacobsen
Assistant Regional Director,
Fish and Wildlife Enhancement



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Ecological Services
9A33 Fritz Lanham Building
819 Taylor Street
Fort Worth, Texas 76102

December 15, 1989

Mr. John J. Hoffman
Geo-Marine, Inc.
1316 Fourteenth Street
Plano, Texas 75074

Dear Mr. Hoffman

We have reviewed your letter dated December 1, 1989, in which you requested any information we may have concerning endangered plant and wildlife species or their critical habitats in Bowie County, Texas. In specific, you requested information to be used to update an environmental assessment of the impact on the Red River Army Depot resulting from the proposed transference of the "ammo mission and assets" of the Pueblo, Colorado Depot.

Your letter stated that alternatives under consideration include the possibility of transferring the materials to various other depots, in which case there would be no new construction at Red River Depot. In the event that construction is required, the information you provided indicates that the areas that would be impacted would either have been previously used and reactivated or the new construction would be interspersed among similar existing facilities. You further stated that no wetlands would be involved in either case.

According to our files, several threatened or endangered migratory birds may pass through the project area. These species are listed in Table 1.

Table 1. Federally listed threatened or endangered species which migrate through the proposed project area.

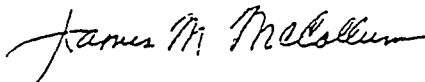
<u>Listed Species</u>	<u>Status</u>
American peregrine falcon (<u>Falco peregrinus anatum</u>)	ENDANGERED
Arctic peregrine falcon (<u>Falco peregrinus tundrius</u>)	THREATENED
Bald eagle (<u>Haliaeetus leucocephalus</u>)	ENDANGERED
Interior least tern (<u>Sterna antillarum athalassos</u>)	ENDANGERED
Piping plover (<u>Charadrius melodus</u>)	THREATENED

Our records also indicate that the endangered bald eagle, Haliaeetus leucocephalus, has recently nested in Bowie County; however, this nest site is not within the confines of the depot. Bowie County is also within the historic range of the red-cockaded woodpecker, Picoides borealis. The habitat of the red-cockaded woodpecker consists of old growth (60-70+ years) loblolly, shortleaf, and, especially, slash and longleaf pine forests. The primary reasons for decline of this woodpecker include a decrease in the quality and quantity of old-growth forest nesting habitat, primarily due to fire suppression and to short-term-rotation timber management on private and public forests.

While it appears that the proposed construction activities would result in minimal impacts to fish and wildlife resources, operation of the tracer/function test range, as described in Item 5 of the attachment to your letter, may have the potential to cause impacts due to the location of the range. According to the information you provided by telephone, the range crosses a tributary to Elliott Creek Reservoir, and the "safe limits" for the range are extremely close to the upper end of the reservoir. The potential for striking or disturbing wildlife, particularly birds, appears to be significant due to the proximity of the reservoir, tributary crossing and the wooded area that the test range lies within. We recommend that your assessment include an evaluation of the potential for impacting wildlife that might utilize the affected tributary area.

Thank you for the opportunity to comment on this activity. If we may be of further assistance, please contact Bill Colbert of my staff at (817) 334-2961.

Sincerely,


for Robert M. Short
Field Supervisor



TEXAS
PARKS AND WILDLIFE DEPARTMENT
4200 Smith School Road Austin, Texas 78744

CHARLES D. TRAVIS
Executive Director

COMMISSIONERS

CHUCK NASH
Chairman San Marcos

GEORGE C. TIM HIXON
Vice-Chairman
San Antonio

December 5, 1989

BOB ARMSTRONG
Austin

LEE H. BASS
F. W. S.

HENRY C. BEECHER II
Dallas

DELOREAN C. BERRY
Rockwall

JOHN L. COLEMAN
Dallas

SEAN E. LARSEN
Dallas

ALAN L. COLEMAN JR.
Dallas

John J. Hoffmann, P.E.
Geo-Marine, Inc.
1316 Fourteenth Street
Plano, Texas 75074

Dear Mr. Hoffmann:

In response to your December 1, 1989 request for information on sensitive species and natural communities within or near the Red River Army Depot project area in Bowie County, we offer the following comments. A search of the Texas Natural Heritage Program Information System revealed no presently known occurrences of special species or natural communities in the general vicinity of the project. Staff review of the project area indicated the possibility for four federal category 2 species to occur. These species with habitats in which they are known to occur include: Coreopsis intermedia (golden wave tickseed)--xeric sandhills, Cyperus grayioides (Mohlenbrock's umbrella sedge)--xeric sandhills, Cypripedium kentuckiense (southern lady's-slipper)--mesic hardwood ravine forest, and Trillium pusillum var. texanum (Texas trillium)--forested seeps. Enclosed for your reference is the Wildlife Division's state endangered and threatened species county-of-occurrence list for Bowie County.

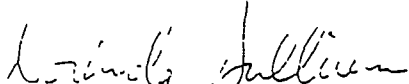
The Heritage Program information included here is based on the best data currently available to the state regarding threatened, endangered, or otherwise sensitive species. However, these data do not provide a definite statement as to the presence or absence of special species or natural communities within your project area, nor can these data substitute for an evaluation by qualified biologists. This information is intended to assist you in avoiding harm to species that occur on your site.

This letter does not constitute an assessment of fish and wildlife impacts that might result from the activity for which this information is provided. Should you need an impact assessment from the Texas Parks and Wildlife Department, contact the Environmental Assessment Branch of the Resource Protection Division, attention Mr. Bob Spain, or contact him at 512/389-4725. All requests for assessments must be in writing.

John Hoffmann
Page 2

Please contact the Texas Parks and Wildlife Department's Heritage Program before publishing or otherwise disseminating any specific locality information. Thank you for contacting us. Please feel free to call me at 512/389-4533 if you have questions.

Sincerely,


Dorinda Sullivan, Data Manager
Texas Natural Heritage Program
Resource Protection Division

Enclosure

DLS:ds

COUNTY Bowie

ENDANGERED SPECIES

- **BEAR, BLACK (*Ursus americanus*)
- ***EAGLE, BALD (*Haliaeetus leucocephalus*)
- ***TERN, LEAST, INTERIOR (*Sterna antillarum athalassos*)
- **WOODPECKER, RED-COCKADED (*Picoides borealis*)
- ***PADDLEFISH (*Polyodon spathula*)
- **SHOVELNOSE STURGEON (*Scaphirhynchus platyrhynchus*)

THREATENED SPECIES

- ***KITE, SWALLOW-TAILED, AMERICAN (*Elanoides forficatus*)
- ***STORK, WOOD (*Mycateria americana*)
- ***SPARROW, BACHMAN'S (*Zimophila aestivalis*)
- *FALCON, PEREGRINE, ARCTIC (*Falco peregrinus tundrius*)
- ***LIZARD, HORNED, TEXAS (*Phrynosoma cornutum*)
- ***RATTLESNAKE, TIMBER (*Crotalus horridus*)
- *SNAKE, SCARLET, NORTHERN (*Cemophora coccinea copei*)
- ***CREEK CHUBSUCKER (*Erimyzon oolongus*)
- ***BLACKSIDE DARTER (*Percina maculata*)
- **BLUE SUCKER (*Cypleptus elongatus*)

***Confirmed species - verified recent occurrence

**Probable species - unconfirmed, but within general distribution pattern of the species

*Possible species - unconfirmed, but at periphery of known distribution of the species

APPENDIX D

ECONOMIC IMPACT
FORECAST SYSTEM

THE ECONOMIC IMPACT FORECAST SYSTEM

The Economic Impact Forecast System (EIFS) acts both as an information source and as an analytical tool. The EIFS forecast models are used to estimate local socioeconomic impacts generated by such military activities as mission change, construction, and training. A method of evaluating the significance of local socioeconomic impacts is called the Rational Threshold Value (RTV) technique.

The U.S. Army Construction Engineering Research Laboratory (CERL) developed the EIFS to provide U.S. Department of the Army (DA) users with access to selected statistics regarding the socioeconomic characteristics of any multicounty area in the United States and to implement a readily available technique for assessing the magnitude and significance of potential socioeconomic impacts on those areas (Robinson et al;1984).

EIFS FORECAST MODELS

EIFS contains several models corresponding to the functional areas (FA's) of military actions:

<u>FUNCTIONAL AREA</u>	<u>EIFS MODEL</u>
Mission Change and Operations	Standard Model
Consturction	Construction Model
Training	Training Model

These FA's not only represent different military activities, they also create uniquely different economic and social effects in the communities surrounding a military installation. The differences in these socioeconomic effects are due primarily to the differences in the patterns of procurement and consumer expenditures for locally produced goods and services.

Even though EIFS consists of different forecast models, they are similar enough to be considered as a "generic" regional economic impact model.

Regardless of the functional area, a military action will usually involve changes in personnel, wages and salaries, and procurements for materials and supplies.

Changes in salaries and procurements are converted into an initial change in local sales. Procurements for materials and supplies are assumed to go to merchants who sell wholesale goods or business and professional services. Personnel salaries are converted to local sales in retail goods and personal services by factors that represent the portion of income spent in the region. These factors differ for civilians and various types of military personnel; they also account for the differences in consumer purchases at post commissary and exchange facilities by military personnel living onpost and offpost.

In terms of national income accounting principles, local sales for wholesale and retail goods do not represent the "output" for those sectors, because the value of the sales includes the cost of goods that are sold. Normally, the trade sectors are treated as "margin" sectors, meaning the value of the goods sold by local merchants is subtracted from the value of their sales. In other words, wholesale and retail merchants only sell products; they do not make them. Consequently, the cost of the goods sold is usually treated as sales for those sectors that produce the commodities. To the extent that the commodities (that are sold by local trade merchants) are produced locally, the EIFS forecast model underestimate the initial effect of a military action within the local economy.

The initial changes in local sales will generate further changes in local sales through a process of spending and responding. This process is called the "multiplier process" and is summarized in the form of an "impact multiplier." Impact multipliers represent the total change in local economic activity that results from an initial change in the demand for locally produced goods and services. As a result, the total change in local economic activity (measured as commercial and industrial sales and sometimes called business volume) is computed in EIFS as the product of the initial change in sales and the local impact multiplier.

The size of an impact multiplier is directly related to the size of the region, the diversity of its industrial and commercial base, and the size of the region's population. The greater the population of an area, the more diverse the region's economic base, and the more likely that purchased products are manufactured locally rather than imported. Therefore, money injected into the economy is "recycled" more often, causing greater changes in income.

Changes in local employment and income are assumed to occur during the multiplier process because of changes in economic activity. That is, local merchants are assumed (like in other economic impact methodologies such as input-output analysis) to increase or decrease employment and wages paid to employees in response to changes in sales. Employment and income changes calculated in EIFS are "full-time" equivalents; i.e., two workers employed for 4 hours a day is the same as one employee working an 8-hour day. Also, the change in local income does not include the effects of overtime-pay, night-pay differentials, weekend pay, etc. Local income is defined as the sum of wages and salaries, dividends, interest, rents, transfer payments, and net social insurance payments.

Total changes in local employment are equal to the number of military and civilian personnel directly affected by the military action plus the employment generated through the local multiplier process (explained above). Similarly, total changes in local income are equal to the wages and salaries of the affected military and civilian personnel plus the local income generated through the multiplier process.

EIFS estimates demographic changes in terms of three variables: migrants, population, and students attending public schools. Migrants are estimated as the portion of affected military and civilian personnel that are expected to relocate as a result of the military action. The change in population is estimated as the number of migrants multiplied by their average household size (military and civilian personnel are handled separately). The change in the number of students attending public schools is equal to the number of migrants times the number of public school students per personnel (treating military and civilian migrants separately).

The change in the demand for local housing is directly related to the migrants (civilian plus those military personnel living offpost). Both the change in the demand for rental housing and the change in the demand for owner-occupied housing are evaluated in EIFS.

The change in county and local government revenues is estimated as a consequence of changes in local income and population. The change in county and local government expenditures is derived in response to changes in local employment and population. Change in net revenues is simply the difference between the changes in local and county government revenues and expenditures.

METHOD FOR EVALUATING THE SIGNIFICANCE OF IMPACTS

A principal concern of environmental impact analysis is the evaluation of impact significance. EIFS provides a procedure for assessing the significance of economic impacts called RTV method (Webster and Shannon, 1978).

Analyzing historical changes seems to be a reasonable approach to evaluating the significance of impacts. Such an analysis, both in a temporal and spatial sense, indicates a region's fluctuating trends. Since temporal data are normally used for this type of analysis, fluctuation of the variables over time was selected as the analysis element. The concept is based on the creation of a "yardstick" against which specified changes may be compared. Inflationary trends must be considered in cases where dollar values are used to plot growth. Otherwise, bias in favor of growth would be developed and the resultant trend would not represent the true fluctuation. To adjust for inflation of the dollar values, the Consumer Price Index (CPI) is used for the appropriate years, and all dollar values are adjusted to 1982 equivalents.

The data source for making significance assessments of impacts is the Bureau of Economic Analysis (BEA) data series which covers income, employment, and population.

THE RATIONAL THRESHOLD VALUE

The RTV method gauges the economic resiliency of a community by threshold values representing the maximum historical percentage fluctuations. These values provide a basis for comparing an action's impact. The assignment of thresholds is made on an individual basis. Therefore, no predetermined course of action can be taken until each region's economy has been evaluated.

In establishing a band of fluctuations around the "average growth rate" for a region, it seems that some degree of conservatism is needed. The band can be made smaller by selecting some arbitrary percentage of the maximum fluctuation; for example, 50-percent. This methodology, although arbitrary, is very similar to the traditional engineering concept that potential threat to human life is often the basis for choosing a factor of safety for bridges, dams, and other projects. A similar weighting system can be devised for the RTV concept, based on a project's potential impact on individuals.

The severity of potential impacts increases in the following order; total sales volume, total personal income, total employment, and total population. Sales volume impacts can be absorbed by manipulation of factors such as inventory, new equipment, etc. Impacts on individual workers or proprietors are neither assured nor immediate. Changes in employment and income, however, are immediate problems. These impacts usually are accompanied by corresponding fluctuations in personal income, which also directly affects individuals. Population, as an indicator, is extremely important and should be weighted to reflect this importance.

Keeping these relative weights in mind, these percentage allowances are arbitrary but sensible. The maximum positive historical fluctuation is allowed during expansions because of the positive connotations of economic growth. While cases of damaging economic growth have been cited, and although the "zero-growth" concept is being accepted by many local planning groups, the effects of reductions and closures general are much more controversial than expansions.

IMPACTS ASSESSMENT USING THE RTV

The RTV profile is used in conjunction with the EIFS forecast models to assess the significance of impacts for a specific geographic area and activity.

APPENDIX E

COMMENTS AND RESPONSES TO THE
DRAFT ENVIRONMENTAL IMPACT STATEMENT AND THE
26 JUNE 1991 PUBLIC MEETING

This appendix contains photocopies of all letters received on the Draft Environmental Impact Statement; those pages of the public meeting transcript that have questions or comments pertaining to that document are also included. Within each letter or statement, issues are identified by a vertical bar marked along the left-hand margin of the text and numbered in sequence. The comments are reiterated and responded to in sequential order.

Responses to comments received are presented as follows (1) written comments and responses and (2) oral comments (made during the public meeting) and responses.

A list summarizing all letters received and all speakers, along with assigned comment numbers, is also included in this appendix. A complete copy of the public meeting transcript is included in appendix A



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

Ref: 8WM-EA

JUL 15 1991

Stewart H. Bornhoft
Colonel, Corps of Engineers
U.S. Army Corps of Engineers
Omaha District
215 North 17th Street
Omaha, Nebraska 68102-4978

Re: Realignment of Pueblo Depot
Activity, Colorado Draft
Environmental Impact Statement

Dear Colonel Bornhoft:

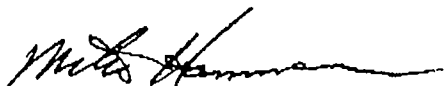
In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the Region VIII office of the Environmental Protection Agency (EPA) has reviewed the referenced Draft Environmental Impact Statement (DEIS). We offer the following comments and concerns for your consideration in appropriate future NEPA documentation.

1 Based on the information provided in the DEIS and the assessment of probable impacts to the environment from the proposed realignment activities we agree that these activities can be accomplished with acceptable environmental impacts. We note that one of the activities which will result in elevated air quality impacts is the small arms ammunition demilitarization. We suggest that the discussion on page 4-28 related to PUDA's deactivation furnace status and capabilities be expressed in a more positive manner. Information should be included in the Final Environmental Impact Statement (FEIS) that will confirm the ability of the deactivation furnace to accommodate the small arms ammunition demilitarization.

2 The EPA understands that the referenced DEIS is not intended to address impacts associated with the disposal of any PUDA real estate. Any release of property will be withheld until appropriate actions, as required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Superfund Amendments and Reauthorization Act (SARA) and other applicable requirements are complied with. We are aware that studies and monitoring activities to support the above legislation and requirements are presently being conducted. It is also our understanding that upon completion of the CHEM DEMIL mission and any hazardous waste site remediation program that a separate NEPA documentation will be prepared to address PUDA property release.

3 | The EPA is assigning a rating of LO to this DEIS. This means that we have not identified any potential environmental impacts requiring substantive changes to the proposed action. If you have any questions related to our comments please contact Mike Hammer of my staff at (303) 293-1695 or FTS 330-1695.

Sincerely,


for Robert R. DeSpain, Chief
Environmental Assessment Branch
Water Management Division



Federal Emergency Management Agency

Region VI, Federal Center, 800 North Loop 288
Denton, Texas 76201-3698

NTH

June 7, 1991

Mr. Robert Nebel
Corps of Engineers
Omaha District (ATTN: CEMRO-PD-M)
215 North 17th Street
Omaha, Nebraska 68102-4978

Dear Mr. Nebel:

Thank you for the opportunity for this Agency to comment on the Draft Environmental Impact Statement prepared for the realignment of Pueblo Depot Activity. Based upon our Regional jurisdiction, our comments apply only to Red River Army Depot.

The concerns of the Federal Emergency Management Agency (FEMA) for the above project relates to the possible negative impact proposed development may have upon flood hazard areas within Bowie County.

4 According to the Flood Insurance Rate Map (FIRM), dated September 25, 1990, prepared for the unincorporated areas of Bowie County, a portion of the Red River Army Depot property is designated within the 100-year floodplain boundary. Even though requirements of the National Flood Insurance Program (NFIP) do not directly apply to military installations, we suggest if any proposed new construction is to take place within the designated flood hazard area floodplain management measures should be recognized to ensure protection of structures from the 100-year flood. As a minimum the first floor elevation of any structure should be constructed at or above the 100-year flood elevation.

If you have questions or need additional information, please contact us at (817) 898-5333.

Sincerely,

A handwritten signature in cursive script that reads "Vicky Durrett".

Vicky Durrett
Natural Hazards Programs Specialist
Natural and Technological Hazards
Division

OFFICE OF ECONOMIC ADJUSTMENT

June 20, 1991

MEMO FOR CEIRO-PD-M

5 | Regarding your DEIS for Pueblo Depot
Activity. page 3-26 cite Pueblo County's
1980 population as 125,972; page 3-33
cites the City of Pueblo's 1980 popu-
lation as the same amount.

This is our only comment.



COMMISSION
RAY STOKER, JR., CHAIRMAN
ROBERT H DEDMAN
WAYNE B DUDDLESTEN

STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION

DEWITT C GREER STATE HIGHWAY BLDG

125 E 11TH STREET
AUSTIN TEXAS 78701 2483
(512) 463 8585

July 3, 1991

ENGINEER DIRECTOR
ARNOLD W OLIVER P E

CONTACT
D-8E 854

Draft Environmental Impact Statement
Realignment of Pueblo Depot
Activity, Colorado with Transfers
to Red River Army Depot, Texas

Mr. Robert Nebel
Department of the Army
Corps of Engineers, Omaha District
(ATTN: CEMRO-PD-M)
215 North 17th Street
Omaha, Nebraska 68102-4978

Dear Mr. Nebel:

6 | Thank you for the opportunity to review the subject Draft Environmental Impact Statement. No negative impacts to our highway system would result from this project. We have no other comments to offer.

Sincerely,

W. A. Lancaster, P. E.
Chief Engineer, Highway Design

By:

A handwritten signature in cursive script, appearing to read "Ken Bohuslav".

for Kenneth C. Bohuslav, P. E.
Engineer of Environmental Studies



DEPARTMENT OF PLANNING AND DEVELOPMENT

1120 COURT ST, ROOM 200 • PUEBLO, COLORADO 81003-2889
(719) 546-6100 • FAX NO (719) 544-0342

July 15, 1991

Mr. Robert Nebel
Attention: CEMRO-PD-M
Corps of Engineers, Omaha District
215 North 17th Street
Omaha, Nebraska 68102-4978

Re: Realignment of Pueblo Depot Activity Colorado--Comments on the Draft
Environmental Impact Statement

Dear Mr. Nebel:

On behalf of the Pueblo County Board of County Commissioners, please accept the following comments on the Draft Environmental Impact Statement for the Realignment of the Pueblo Depot Activity (PUDA).

The Draft Environmental Impact Statement (EIS) contains several statements related to the reuse and/or disposal of the PUDA facilities which appear inconsistent with the Army's prior communication and direction. The Pueblo community has been told at several scoping meetings with the Army and other representatives of the Department of Defense that:

- PUDA was approved for realignment by Congress through the Base Closure and Realignment Act (PL 100-526). Congress did not approve closure of PUDA.
- Realignment does not prohibit reuse of available surplus facilities, either by other military missions or private sector lease.
- Disposal of available surplus property is to occur to "finance" the overall closure and realignment scheme. Disposal will be at fair market value, with a priority system beginning with Federal, then State/local, and lastly to private purchasers.
- Disposal or reuse would be considered as property became available.

Pueblo has actively pursued numerous reuse proposals for portions of PUDA. We have endorsed additional military missions and have established dialogue with potential public and private sector users for portions of PUDA.

Mr. Robert Nebel
Re: Realignment of Pueblo Depot Activity Colorado--Comments
on the Draft Environmental Impact Statement
July 15, 1991
Page 2

The EIS gives the reader the overall feeling that it is a foregone conclusion that PUDA will be closed. The EIS perpetuates the "closure myth" by reprinting on page 1-3 the Commission's statements without clarification of the Commission's authority or the specific final action of Congress:

"The Commission was prevented from closing PUDA because of the chemical demilitarization (CHEM DEMIL) mission."

"The installation is to be realigned to the maximum extent possible to facilitate closure as soon as the CHEM DEMIL mission is complete."

The Commission was prevented from closing PUDA because it lacked authority to do so. Only Congress had the authority to close PUDA, and it chose not to do so. Whether Congress would have closed PUDA had it not been for the CHEM DEMIL mission is speculation. Congress did not direct that PUDA "be realigned" to the maximum extent possible to facilitate closure."

The EIS also implies that the facilities at PUDA will not be offered for reuse or disposal as they become available. Some examples from the EIS text which suggest that PUDA will be "mothballed" are:

**there are presently no plans to dispose of PUDA property. (p. S-5)

The alternative use of facilities idled by the realignment of missions at PUDA is not discussed in this Draft Environmental Impact Statement (EIS) because there are no immediate plans to dispose of any of PUDA's real property. (pp. 1-4 and 1-10)

There is no current Army proposal to partially close and dispose of portions of PUDA because of existing environmental cleanup requirements and existing support requirements for the CHEM DEMIL mission. (p. 1-11)

Realignment will not involve physical changes other than cessation of activities and mothballing of buildings at PUDA. (p. 4-1)

**several buildings and structures will be closed and relegated to caretaker status during realignment. **Ammunition storage igloos will be closed as stocks are transferred or demilitarized. (p. 4-29)

The concepts of "mothballing" and "caretaker" are not consistent with Pueblo's desire to promote the reuse of the PUDA's many facilities.

We understand that facilities must meet certain environmental standards prior to disposal. The EIS is very uncertain as to when specific environmental assessments and cleanup (if needed) will be completed. Without a firm environmental cleanup commitment and completion schedule in place, we must take exception with any environmental impact finding concluded in this EIS.

* * * * *

Mr. Robert Nebel
Re: Realignment of Pueblo Depot Activity Colorado--Comments
on the Draft Environmental Impact Statement
July 15, 1991
Page 3

The following additional comments are presented in order in which the matter appears in the EIS.

- 11 | Page 2-24. Pueblo County has formed a reuse committee which includes the Department of Planning and Development, Department of Public Safety and Operations, County Attorney, and County Manager. Participation is not limited to "one" person from the Army. Participation depends on the agenda matters. Meetings often include numerous representatives from the Army, Colorado National Guard, State Legislators, and Congressional Representatives and Senators or their staff, and interested community leaders. The activities of the committee have not been suspended.
- 12 | Page 3-31. What is current peak monthly withdrawal of groundwater? The EIS reports 1981 data.
- 13 | Page 3-31. The sewer plant's "functional capacity" is identified as 5,000 gallons per day. Is functional capacity the same as the minimum flow at which the treatment plant will function and still achieve its discharge standards? A 5,000 gallon per day level is reported on page 4-23 as "minimum operational level". Are they the same?
- 14 | Page 3-36. The EIS indicates that PUDA is not currently proposed for placement on the National Priorities List because PUDA did not score higher than 28.5 on the Hazard Ranking System. What was PUDA's score, and what factor and facilities contributed to its score?
- 15 | Page 3-54. The EIS states "the integrity of the sanitary lines is known" but then notes the sewer line to the east lagoons "may" have leaks. If the integrity is known, it should also be known if said line does or does not have leaks.
- 16 | Page 4-5. The RTV method gauges the "economic resiliency" of a community, based on historic fluctuations in a localized area. We must question the validity of establishing threshold levels using this concept of economic resiliency. Historic fluctuations may demonstrate a community's ability to survive if we are considering a tourist oriented community with a "high" season or a cannery/fishing community with a "catch" season, but economic resiliency seems inappropriate to apply to Pueblo.
- 17 | Page 4-6 and Page 4-8. The EIS references the PUDA "region" for population, employment, and income. The "region" is neither defined nor is it mapped. Without either a "study area" or "region" defined, it is not possible to review some data.
- 18 | Page 4-8. The EIS finds a decrease of less than 1 percent in the total regional employment. This value cannot be calculated from the employment data presented in the EIS.

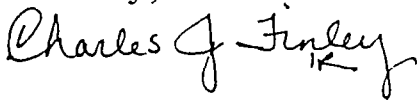
Mr. Robert Nebel
Re: Realignment of Pueblo Depot Activity Colorado--Comments
on the Draft Environmental Impact Statement
July 15, 1991
Page 4

Page 4-10. The EIS contains no discussion of the realignment on the value of housing, either on the fair market value of homes or on the monthly rent of rented units.

19 Prior subsections of the EIS report a loss of employment and a projected decrease in population. We express concern that an additional 610 housing units on the market, in a community with increased unemployment and population decline, may significantly and adversely impact the market value of residential properties. This decline in value will impact all residential property owners (e.g., reduced sale price, reduced capacity to acquire capital from equity). It will also impact local governments' revenue. Property taxes are a major source of revenue for the City and County of Pueblo, school districts, and special districts (e.g., fire, water, sanitation, library). Property taxes are calculated on assessed value, which is based on comparable sales. A decline in sale price results in an overall decline in assessed value of all comparable residential units. The EIS does not discuss the impact of the realignment of PUDA on local governments' revenue.

Thank you for your consideration of our comments. If you have any questions, please do not hesitate to contact me.

Sincerely,



Charles J. Finley
Director

CJF:lr

c: Board of County Commissioners
James E. Spaccamonti, County Manager

1 is in the draft Environmental Statement.

2 The first inquiry relates to Page S-7.

3 There is a statement that asbestos abatement will be
4 carried out pursuant to standard Army procedures. We
5 do not know how standard Army procedures apply to
20 6 those facilities at Pueblo Depot Activity; whether
7 the word "abatement" is interchangeable with
8 "removal" or whether the word "abatement" has a
9 different definition under standard Army procedures
10 for asbestos. So we are asking for clarification as
11 to how those apply to Pueblo Depot Activity.

12 MR. MICK. I don't personally have
13 knowledge of that. Mike, can you respond to that?

14 MR. VOIGHT: In terms of asbestos
15 abatement, it would be removal; and in some cases
16 where you have a loose type of asbestos -- we're
17 talking about tiles, transite, that sort of thing, a
18 stable asbestos, we wouldn't, from a base closure
19 environmental standpoint, look at removal of that, as
20 long as it is in a satisfactory condition. If you
21 have pipe insulation, something like that, that's
22 visibly loose, that would definitely be what would be
23 removed.

24 MR. FINLEY. There seems to be a great deal
25 of asbestos between those two extremes. Let me offer

1 that asbestos which is flyable which is not visibly
2 loose. Would those be abated in a removal manner, or
3 would those be abated in a containment manner?

4 COL. BORNHOFT. Normally, we would not get
5 into an active dialogue. We would take what the
6 questions are and deal with those. Just so you get a
7 feel for what the scope of that is, if you could give
8 us all your questions and then depending upon what
9 the reaction is that Gary or his folks may have, we
10 may be able to, on the spot, address those. It may
11 be better to deal with that in a more formal manner.

12 MR. FINLEY: We were not anticipating
13 responses this evening.

14 On Page 1-3, there are two statements that
15 are accurately quoted from the Commission report, one
16 being that the Commission was prevented from closing
17 PUDA, and the second statement that the installation
18 is to be realigned to the maximum extent possible, to
19 facilitate closure as soon as possible as soon as the
20 chemical demil mission is completed.

21 The question that we would have is: First
22 of all, were these enacted by Congress or were they
23 strictly comments of the Commission, making the
24 distinction here between comments of the Commission
25 and that which Congress acted on. And the second

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1 question that flows from that is whether or not the
2 findings and evaluations within the draft EIS are
3 based on either of these Commission statements.

4 Another question that we have relates to
5 Page 3-36 It speaks to the hazard ranking system
6 and indicates that a score higher than 28.5 places a
7 facility on the National Priorities List. The report
8 also indicates that Pueblo Depot Activity does not
9 have a ranking high enough to be on this list. What
10 was the numerical score of Pueblo Depot Activity?

11 We also had a question -- there are
12 statements regarding the impact on employment, and it
13 speaks to the regional employment and provides data
14 for Pueblo County employment. In the section of the
15 report relating to the impact on the employment, are
16 regional employment and Pueblo County employment the
17 same thing; and if not, could you identify what was
18 the regional employment data base used to make the
19 calculations?

20 We also noted that there does not appear to
21 be a housing market impact assessment within the
22 report. I'm not sure that one is required; but we
23 would ask, if it is possible, to give consideration
24 to what will it do to the Pueblo housing market with
25 this many people, primary and secondary people,

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1 losing their jobs A decline in overall population
2 is also projected in the Pueblo housing market.

3 We would also like clarification with
4 respect to the model that was used, and it speaks
5 about a community's adaptability. Resiliency, I
6 believe, was the exact word. We looked in the
7 appendix, where we were referred to, to try to find
8 out what is the definition of a community's
9 resiliency. It is unclear. The only thing that we
10 could deduce is that if a community has survived high
11 unemployment and adversity in the past, that you
12 presume that it will be able to sustain that again.
13 I'm not sure we agree with that logic, but we need to
14 know what is your technical definition of resiliency
15 and how does it work within the model.

16 COL BORNHOFT: I understand.

17 MR. FINLEY: That's our comments.

18 COL. BORNHOFT: Okay. Is there anyone else
19 who has any questions or comments they wish to offer
20 or submit? Why don't we pass you the microphone and
21 ask you if you would state your name and your
22 affiliation.

23 MS. ANTON. Genevieve Anton. I'm with the
24 Gazette Telegraph newspaper in Colorado Springs. I
25 | didn't see anything -- and maybe I overlooked it in

22

1 the draft statement -- about the cost of this, but is
2 that considered part of the Environmental Impact
3 Statement, what it will cost to actually move these
4 operations to another location and a balancing of how
5 you're going to make up for that cost?

6 MR. MICK: Was that the cost you were
7 talking about earlier, not the cost of the
8 preparation of the EIS but the --

9 MS. ANTON: That was about preparation of
10 the EIS.

11 COL. BORNHOFT: Let me clarify. There was
12 a question prior to the meeting beginning that I had
13 understood to be what was to be the cost of the
14 preparation of the EIS itself.

15 MS. ANTON: If you want to add that to
16 it --

17 COL. BORNHOFT: Are you asking that
18 question also?

22

19 MS. ANTON: Yes, two questions. What is
20 the cost of the EIS, and what would be the cost of
21 actually transferring these operations to another
22 base, and is there any consideration given of how --
23 of that as a factor in whether or not to do it?

24 I'll throw this one in, too. Also, does
25 the study look -- is it going to look at any

23

1 possibility of other operations being brought here to
2 offset or mitigate some of the lawsuits as
3 consideration for moving these operations out?
4 Because my understanding is the EIS isn't looking at
5 the impact of closing the depot, since that's not
6 what this decision is addressing; yet, in effect, you
7 are closing most of the operations of the depot by
8 doing this

9 COL. BORNHOFT: Question understood. My
10 head nodding is not answering the question. It
11 acknowledges the fact that I'm understanding the
12 question. Do you have any others?

13 MS. ANTON: That's it.

14 COL. BORNHOFT. Thank you. Is there anyone
15 else who has any questions or comments they wish to
16 add or offer at this time?

17 Hearing none and seeing none, at this time,
18 I would thank you for attending. Again, I remind you
19 that if you wish to submit a written statement, you
20 can do so up until and including the 15th of July,
21 1991. The statement should be sent to the Omaha
22 District The address is in your handout. Again, I
23 thank you for attending and the meeting --

24 MS. ANTON: I have one question. This
25 isn't for the record. How do we find out what the

COMMENTS AND RESPONSES CONCERNING THE DRAFT EIS

The following are comments received regarding the Draft Environmental Impact Statement (EIS), which was available for a 45-day review period that ended 15 July 1991. Five official comment letters were received during the review period. Oral comments were received during the public meeting, which was held on 26 June 1991 at the Pueblo Community College in Pueblo, Colorado. Approximately 25 people attended, however, only 2 people presented comments.

WRITTEN COMMENTS AND RESPONSES

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION VIII, LETTER OF JULY 15, 1991

1. Based on the information provided in the DEIS and the assessment of probable impacts to the environment from the proposed realignment activities we agree that these activities can be accomplished with acceptable environmental impacts. We note that one of the activities which will result in elevated air quality impacts is the small arms ammunition demilitarization. We suggest that the discussion on page 4-28 related to PUDA's deactivation furnace status and capabilities be expressed in a more positive manner. Information should be included in the Final Environmental Impact Statement (FEIS) that will confirm the ability of the deactivation furnace to accommodate the small arms ammunition demilitarization.

RESPONSE. Sections 3.1.8.1 and 4.1.6.1 have been revised.

2. The EPA understands that the referenced DEIS is not intended to address impacts associated with the disposal of any PUDA real estate. Any release of property will be withheld until appropriate actions, as required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Superfund Amendments and Reauthorization Act (SARA) and other applicable requirements are complied with. We are aware that studies and monitoring activities to support the above legislation and requirements are presently being conducted. It is also our understanding that upon completion of the CHEM DEMIL mission and any hazardous waste site remediation program that a separate NEPA documentation will be prepared to address PUDA property release.

RESPONSE. Comment noted. Follow-on NEPA analysis and documentation will be prepared to address PUDA property cleanup, disposal, and reuse.

3 The EPA is assigning a rating of LO to this DEIS This means that we have not identified any potential environmental impacts requiring substantive changes to the proposed action

RESPONSE Comment noted

FEDERAL EMERGENCY MANAGEMENT AGENCY, REGION VI, LETTER OF JUNE 7, 1991

4 The concerns of the Federal Emergency Management Agency (FEMA) for the above project relates to the possible negative impact proposed development may have upon flood hazard areas within Bowie County

According to the Flood Insurance Rate Map (FIRM), dated September 25, 1990, prepared for the unincorporated areas of Bowie County, a portion of the Red River Army Depot property is designated within the 100-year floodplain boundary Even though requirements of the National Flood Insurance Program (NFIP) do not directly apply to military installations, we suggest if any proposed new construction is to take place within the designated flood hazard area floodplain management measures should be recognized to ensure protection of structures from the 100-year flood As a minimum the first floor elevation of any structure should be constructed at or above the 100-year flood elevation

RESPONSE No new construction is associated with this realignment action

OFFICE OF ECONOMIC ADJUSTMENT, MEMO OF JUNE 20, 1991

5 Regarding your DEIS for Pueblo Depot Activity page 3-26 cite Pueblo County's 1980 population as 125,972, page 3-33 cites the City of Pueblo's 1980 population as the same amount

RESPONSE Section 3 1 6 7 2 has been corrected

TEXAS STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION, LETTER OF JULY 3, 1991

6. Thank you for the opportunity to review the subject Draft Environmental Impact Statement No negative impacts to our highway system would result from this project We have no other comments to offer

RESPONSE Comment noted

PUEBLO COUNTY DEPARTMENT OF PLANNING AND DEVELOPMENT, LETTER OF JULY 15, 1991

7. The Draft Environmental Impact Statement (EIS) contains several statements related to the reuse and/or disposal of the PUDA facilities which appear inconsistent with the Army's prior communication and direction. The Pueblo community has been told at several scoping meetings with the Army and other representatives of the Department of Defense that

- PUDA was approved for realignment by Congress through the Base Closure and Realignment Act (PL 100-526). Congress did not approve closure of PUDA.
- Realignment does not prohibit reuse of available surplus facilities, either by other military missions or private sector lease.
- Disposal of available surplus property is to occur to "finance" the overall closure and realignment scheme. Disposal will be at fair market value, with a priority system beginning with Federal, then State/local, and lastly to private purchasers.
- Disposal or reuse would be considered as property became available.

Pueblo has actively pursued numerous reuse proposals for portions of PUDA. We have endorsed additional military missions and have established dialogue with potential public and private sector users for portions of PUDA.

RESPONSE: This EIS was prepared to address only realignment of PUDA. Follow-on NEPA analysis and documentation will be prepared to address PUDA property cleanup, disposal, and reuse. The Commission on Base Realignment and Closure states in its December 1988 report that the installation (referring to PUDA) should be realigned to the maximum extent possible to facilitate closure as soon as chemical demilitarization is complete. Congress approved the report in its entirety (Public Law 100-526).

8. The EIS gives the reader the overall feeling that it is a foregone conclusion that PUDA will be closed. The EIS perpetuates the "closure myth" by reprinting on page 1-3 the Commission's statements without clarification of the Commission's authority or the specific final action of Congress.

"The Commission was prevented from closing PUDA because of the chemical demilitarization (CHEM DEMIL) mission."

"The installation is to be realigned to the maximum extent possible to facilitate closure as soon as the CHEM DEMIL mission is complete "

The Commission was prevented from closing PUDA because it lacked authority to do so. Only Congress had the authority to close PUDA, and it chose not to do so. Whether Congress would have closed PUDA had it not been for the CHEM DEMIL mission is speculation. Congress did not direct that PUDA "be realigned" to the maximum extent possible to facilitate closure "

RESPONSE. See response to comment 7

9 The EIS also implies that the facilities at PUDA will not be offered for reuse or disposal as they become available. Some examples from the EIS text which suggest that PUDA will be "mothballed" are

**there are presently no plans to dispose of PUDA property.
(p S-5)

The alternative use of facilities idled by the realignment of missions at PUDA is not discussed in this Draft Environmental Impact Statement (EIS) because there are no immediate plans to dispose of any of PUDA's real property (pp 1-4 and 1-10)

There is no current Army proposal to partially close and dispose of portions of PUDA because of existing environmental cleanup requirements and existing support requirements for the CHEM DEMIL mission (p 1-11)

Realignment will not involve physical changes other than cessation of activities and mothballing of buildings at PUDA (p 4-1)

**several buildings and structures will be closed and relegated to caretaker status during realignment **Ammunition storage igloos will be closed as stocks are transferred or demilitarized
(p 4-29)

The concepts of "mothballing" and "caretaker" are not consistent with Pueblo's desire to promote the reuse of the PUDA's many facilities

RESPONSE. For the last 2 years, the Army, the Pueblo community, and the Office of Economic Adjustment have been working with the Pueblo County reuse committee. The committee has been monitoring the realignment process at Pueblo, seeking a public consensus for the reuse of the facility and providing a public forum on realignment issues

10. We understand that facilities must meet certain environmental standards prior to disposal. The EIS is very uncertain as to when specific environmental assessments and cleanup (if needed) will be completed. Without a firm environmental cleanup commitment and completion

schedule in place, we must take exception with any environmental impact finding concluded in this EIS

RESPONSE· The Army will ensure that all remedial action necessary to protect human health and the environment with respect to hazardous substances on the property will occur prior to any transfer of property at PUDA. Decisions regarding property cleanup, disposal, or reuse will be analyzed in follow-on NEPA analysis and documentation. See response to comment 9

11. Page 2-24 Pueblo County has formed a reuse committee which includes the Department of Planning and Development, Department of Public Safety and Operations, County Attorney, and County Manager. Participation is not limited to "one" person from the Army. Participation depends on the agenda matters. Meetings often include numerous representatives from the Army, Colorado National Guard, State Legislators, and Congressional Representatives and Senators or their staff, and interested community leaders. The activities of the committee have not been suspended.

RESPONSE· See response to comment 9. The Office of Economic Adjustment and the reuse committee have been working closely together, and this cooperative effort will continue.

12. Page 3-31 What is current peak monthly withdrawal of groundwater? The EIS reports 1981 data.

RESPONSE· The 1990 peak monthly withdrawal of ground water was slightly over 15 million gallons. Section 3 1 6 7 1 has been revised to reflect this change.

13. Page 3-31 The sewer plant's "functional capacity" is identified as 5,000 gallons per day. Is functional capacity the same as the minimum flow at which the treatment plant will function and still achieve its discharge standards? A 5,000 gallon per day level is reported on page 4-23 as "minimum operational level." Are they the same?

RESPONSE The functional capacity and the minimum operational level are the same.

14. Page 3-36 The EIS indicates that PUDA is not currently proposed for placement on the National Priorities List because PUDA did not score higher than 28.5 on the Hazard Ranking System. What was PUDA's score, and what factor and facilities contributed to its score?

RESPONSE The intention of Section 3 1 7 is to explain the Hazard Ranking System requirements used by EPA to determine inclusion on the National Priorities List (NPL). PUDA is currently not proposed for placement on the NPL. In addition, EPA has not released its scoring results.

15. Page 3-54 The EIS states "the integrity of the sanitary lines is known" but then notes the sewer line to the east lagoons "may" have leaks. If the integrity is known, it should also be known if said line does or does not have leaks.

RESPONSE The integrity of the sanitary lines is not known. The statement in the text was incorrect. Section 3 1 7 3 has been corrected.

16. Page 4-5 The RTV method gauges the "economic resiliency" of a community, based on historic fluctuations in a localized area. We must question the validity of establishing threshold levels using this concept of economic resiliency. Historic fluctuations may demonstrate a community's ability to survive if we are considering a tourist oriented community with a "high" season or a cannery/fishing community with a "catch" season, but economic resiliency seems inappropriate to apply to Pueblo.

RESPONSE. The use of economic resilience as measured by the RTV is applicable to Pueblo County. Historical employment fluctuations do not represent only the changes in seasonal employment (such as those due to tourism or commercial fishing). Average annual employment changes measure a region's response to fluctuations in particular sectors over an extended period of time (the RTV method uses 1 year). Regional responses to seasonal variations would require the use of monthly or quarterly data. Military installations do not experience seasonal variations, but rather, economic activity is somewhat stable over long periods of time. Therefore, average annual data rather than short-term data are appropriate for analyzing the socioeconomic impacts of military installations.

17. Page 4-6 and page 4-8 The EIS references the PUDA "region" for population, employment, and income. The "region" is neither defined nor is it mapped. Without either a "study area" or "region" defined, it is not possible to review some data.

RESPONSE The region of influence, which is Pueblo County, is defined in section 3 1 6 1.

18. Page 4-8 The EIS finds a decrease of less than 1 percent in the total regional employment. This value cannot be calculated from the employment data presented in the EIS.

RESPONSE Section 4 1 4 3 has been corrected to reflect a change of 2.7 percent of the total regional labor force for 1989 (49,650). This percentage also lies within the threshold values and is considered not significant.

19. Page 4-10 The EIS contains no discussion of the realignment on the value of housing, either on the fair market value of homes or on the monthly rent of rented units.

Prior subsections of the EIS report a loss of employment and a projected decrease in population. We express concern that an additional 610 housing units on the market, in a community with increased unemployment and population decline, may significantly and adversely impact the market value of residential properties. This decline in value will impact all residential property owners (e g , reduced sale price, reduced capacity to acquire capital from equity). It will also impact local governments' revenue. Property taxes are a major source of revenue for the City and County of Pueblo, school districts, and special districts (e g , fire, water, sanitation, library). Property taxes are calculated on assessed value, which is based on comparable sales. A decline in sale price results in an overall decline in assessed value of all comparable residential units. The EIS does not discuss the impact of the realignment of PUDA on local governments' revenue.

RESPONSE: The change in the demand for local housing is directly related to the migrants (civilian personnel plus those military personnel living offpost). Both the change in the demand for rental housing and the change in the demand for owner-occupied housing are evaluated in the Economic Impact Forecast System. The demand for owner-occupied housing and rental housing directly affects market values and rental prices. Because no significant impact on demand was found, no further investigation as to specific changes in market values or rental prices was made.

With 50,872 year-round housing units in Pueblo County and a vacancy rate of 7.5 percent, the increase of 613 vacant housing units (worst case) is not sufficient to warrant further investigation.

ORAL COMMENTS AND RESPONSES

Although the entire public meeting transcript is included at the end of appendix A, the pages that contain comments that have not been previously addressed are reproduced here, and responses to those comments are provided.

PUBLIC MEETING TRANSCRIPT, 26 JUNE 1991

MR. CHUCK FINLEY

20 The first inquiry related to Page S-7. There is a statement that asbestos abatement will be carried out pursuant to standard Army procedures. We do not know how standard Army procedures apply to those facilities at Pueblo Depot Activity, whether the word "abatement" is interchangeable with "removal" or whether the word "abatement" has a different definition under standard Army procedures for asbestos. So we

are asking for clarification as to how those apply to Pueblo Depot Activity

There seems to be a great deal of asbestos between those two extremes. Let me offer that asbestos which is friable which is not visibly loose. Would those be abated in a removal manner, or would those be abated in a containment manner?

RESPONSE. For the purpose of this document, abatement is defined as remediation, which is the removal and disposal or the containment of asbestos--whichever the situation warrants. Clarification as to how asbestos abatement will be conducted under base closure and realignment policy is as follows. Only friable asbestos that presents a threat to health and safety will be removed. Nonfriable asbestos and friable asbestos which is encapsulated or in good repair shall be left in place and identified to the buyer. All asbestos abatement activities will be conducted in accordance with U S Environmental Protection Agency, Occupational Safety and Health Administration, and U S Army (TM-612, Asbestos Control) regulations.

21. The question that we would have is first of all, were these enacted by Congress or were they strictly comments of the Commission, making the distinction here between comments of the Commission and that which Congress acted on. And the second question that flows from that is whether or not the findings and evaluations within the draft EIS are based on either of these Commission statements.

RESPONSE. This EIS addresses the Commission's recommendations which Congress enacted into law (Public Law 100-526).

MS. GENEVIEVE ANTON (GAZETTE TELEGRAPH)

22. maybe I overlooked it in the draft statement--about the cost of this, but is that considered part of the Environmental Impact Statement, what it will cost to actually move these operations to another location and a balancing of how you're going to make up for that cost? What is the cost of the EIS, and what would be the cost of actually transferring these operations to another base, and is there any consideration given of how--of that as a factor in whether or not to do it?

RESPONSE. The Defense Secretary's Commission on Base Realignment and Closure estimate was that implementation of the Commission recommendations would lead to a total annual savings of \$693.6 million and a 20-year savings with a net present value of \$5.6 billion, through the establishment of a more efficient base structure. The Commission also considered the costs of closure and realignment in making its recommendations.

23. . does the study look--is it going to look at any possibility of other operations being brought here to offset or mitigate some of the lawsuits as consideration for moving these operations out?

RESPONSE: This EIS does not address the possibility of other operations being brought to Pueblo Depot Activity. Follow-on NEPA analysis and documentation will be prepared to address PUDA property cleanup, disposal, and reuse.

Letters Received

Comment Numbers

United States Environmental Protection Agency
Region VIII
999 18th Street - Suite 500
Denver, Colorado 80202-2405

1, 2, 3

Federal Emergency Management Agency
Region VI, Federal Center
800 North Loop 288
Denton, Texas 76201-3698

4

Office of Economic Adjustment
Office of the Secretary of Defense
Washington, D C 20301

5

State Department of Highways and
Public Transportation
Dewitt C Greer State Highway Building
125 E 11th Street
Austin, Texas 78701-2483

6

Department of Planning and Development
1120 Court Street, Room 200
Pueblo, Colorado 81003-2889

7, 8, 9, 10, 11, 12,
13, 14, 15, 16, 17,
18, 19

Mr Chuck Finley

20, 21

Ms Genevieve Anton, Gazette Telegraph

22, 23